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and kindred subjects

CONDUCTED BY

THOMAS MEEHAN

FORMERLY EDITOR OF THE "GARDENER'S MONTHLY," AND AUTHOR OF THE "NATIVE FLOWERS AND FERNS OF THE UNITED STATES." VICE-PRESIDENT OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA. BOTANIST TO THE PENNSYLVANIA STATE BOARD OF AGRICULTURE, ETC.

ASSISTED BY

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Preface to Volumes I and II.

THE Conductors close here the first volumes of their task. Their object was unique. On the one hand are novices, who know little of gardening or of the sciences relating to garden art. These require the plain practical hints for successful study wherewith to lay the foundation of future success. On the other hand are hosts of intelligent men and women who desire to keep abreast with the advance guard in popular knowledge. There seemed no reason why both of these classes should not be ministered unto. And then there was the desire of continuing in a cheap and popular form, the great work of the senior conductor, *The Flowers and Ferns of the United States.* How well this unusual combination of desirable points has been accomplished the work itself will testify. Having finished this one great day of our labors, the conductors may feel

> "Like one who draws the drapery of his couch
> Around him, and lies down to pleasant dreams."

For the task has been a pleasant one, and they will awake to the responsibilities of the new volume with a courage born of the enthusiasm of hosts of friends.

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RANUNCULUS FASCICULARIS

RANUNCULUS FASCICULARIS.

EARLY CROWFOOT.

NATURAL ORDER, RANUNCULACEÆ.

RANUNCULUS FASCICULARIS, Muhlenberg.—Plant silky, pubescent; stem three or four to twelve or fifteen inches high, cæspitose, commencing to flower young, subsequently elongated; root a fascicle of thick fleshy fibres: radical leaves on petioles three to eight inches long, ternately or quinately dissected, appearing pinnate; leaflets cuneate—oblong, the lateral ones mostly petiolulate, and rather remote from the three-parted terminal one; carpels scarcely margined, tipped with a slender, rather recurved, beak. (Darlington's *Flora Cestrica*. See also Gray's *Flora of the Northern United States* and Wood's *Class-Book of Botany*.)

Our botanical books call this "Early Crowfoot." The common name, "Crowfoot," stands for the whole genus. Some few are popularly known as "Buttercups." If the people had given the popular name to this plant, it would probably have been called "Early Buttercup," for it is more closely allied to the Buttercups of the Old World than any species found indigenous in the Atlantic portions of the United States. There are three introduced species quite common in Eastern fields and meadows, —*Ranunculus bulbosus*, *Ranunculus repens*, and *Ranunculus acris*, and to these this truly American kind is closely allied. The introduced species, however, seem to thrive best in open situations, and to spread when once introduced in a remarkable manner; while our "Early Crowfoot" prefers rocky hills and rather shady places. Instead of increasing, its limits are rather declining. At least on the Wissahickon, near Philadelphia, where the writer knew it abundantly thirty years ago, it has comparatively disappeared; and in one spot where it could have been gathered in great numbers, the one only plant was found from which our illustration was taken. In these rocky situations it flowers in April, at least a month before the more common Buttercups, and in this way came by its common name.

In plants which we have gathered on the Wissahickon before, there have been more root leaves than on this, and these more strongly parted; and besides the bunch of roots, or *fasciculus*, from which the plant gets its specific name, had more fleshy fibres. But on the whole the illustration gives a good idea of the Pennsylvania plant, which differs in many respects from those of other sections. A drawing has already been given in Dr. Gray's *Genera Illustrata* and Hooker's *Flora Boreale Americanæ*, and both of these differ in some respects from each other and from ours. In theirs the petals are much broader in proportion to their length than ours, and the form of the nectary (*a* in Fig. 2) is different from theirs; but the essential character, as noted in Gray's Manual of Botany, "the base of the petal scarcely broader than the scale," is very well preserved in our form. The species seems to have been confounded by Pursh and other botanists of that time with the "Goldilocks" of Europe, *Ranunculus auricomus*; and *Ranunculus auricomas* described by Pursh as being found in Pennsylvania was probably this species, which resembles the European in its early flowering character, and in its habit of preferring woods to the open fields.

We might here call the attention of the student to the nectary (Fig. 2 *a*), which is a little gland, or rather sac, secreting a sweet liquid. It is found in all the species referred to *Ranunculus*, and it may therefore be regarded as one of the essential characters of the genus. The purpose of the secretion has not yet been ascertained. Many eminent botanists of modern times believe that the sweet liquids of flowers are with the special design of attracting insects, and thus securing cross-fertilization through the pollen they bring on their visits for the liquid. But Mr. Darwin has noted, in his work on cross and self-fertilization, that the *Ranunculus bulbosus* is a self-fertilizer, and

the writer of this has shown in the *Proceedings of the Academy of Natural Sciences of Philadelphia*, how the plant receives its own pollen. There are many series of stamens. The outer row mature and scatter the pollen on the glossy petals, these close at night, and drop the pollen on the stigmas in the centre. The English poet Clare, a rare observer of nature, believes the humble bee never visits the Buttercup in that land.

"And sprents the red thighs of the humble bee,
Who 'gins betimes unwearied minstrelsy;
Who breakfasts, dines, and most divinely sups,
With every flower save golden buttercups,
On whose proud bosoms he will never go,
But passes by with scarcely 'How do ye do?'"

As there seems no use in the economy of nature for the Buttercup, it was a pleasant thought in the poet Clare, assuming, probably, that everything ought to have some use, and noting that bees rejected the sweet secretions, to devote the flowers to the little spirits of the air which poets love to dream about. When the shades of evening fell, the supernatural, according to the poets, commenced its active life;

"And fairies now, no doubt unseen,
In silent revels sup;
With dew drop bumpers toast their queen,
From crow flower's golden cup."

The floral emblemists have dedicated the flowers to "Ingratitude," and in explanation say that the idea originated from the plant's growing so freely on the farmers' land without returning anything useful for the good living afforded it. The pretty Asiatic *Ranunculus* of the poets,—the one so common in gardens for the great beauty of its flowers, is the one to which the name "Crowfoot" properly belongs; and the name was given to it because the mass of thick roots, both in form and color, do strongly resemble the foot of a crow, as those who plant them as they come from Europe well know. The "Crowfoot" of the older poets does not, however, always refer to the *Ranunculus*. In Shakespeare's time what we now call "Ragged Robin"—a species of *Lychnis*—was "Crowfoot" to them.

Even the origin of the name "Buttercup" has had its controversy. To those who recollect their childhood, the name seems to have a certain and definite meaning. With the writer of this, and possibly many more than him, the Buttercup has the earliest place in his memory of all flowers. As Eliza Cook says,

"Who does not recollect the hours,
When burning words and praises,
Were lavished on those shining flowers,
Buttercups and daisies?"

A common practice with little children is to hold the "butter flower" under the other's chin to note by the reflection of the light from the flower whether he "likes butter." But Dr. Prior says it is not from "butter" and "cup," but a corruption of words from other languages meaning "golden button" or "golden head." But we must leave these matters to the critical student, and rest satisfied with recording what others say of it.

There are many species in the mountain or cooler regions of Europe, Asia and America, but not many extend to the low or warmer regions. Though about fifty species have been found within the limits of the United States, only about a dozen of them have been collected east of the Mississippi river. Our species, the "Early Buttercup," was at one time supposed to reach California, but according to Hooker, it extends in the north across Canada from the east to the south end of Lake Winnipeg. Dr. Beardslee notes it at Painesville, along the lakes in Ohio. In Michigan and Ohio and Minnesota it is abundant. It has not been found in Nebraska so far as known at this writing. Its most southern location is in Northwestern Arkansas, where it has been collected by Dr. F. L. Harvey. It is rather common in Illinois and Missouri.

EXPLANATION OF THE PLATE.—1. A rather small plant from the Wissahickon near Philadelphia. 2. An enlarged petal, showing at *a* the nectariferous scale.

WILD FLOWERS AND NATURE.

TO THE TRAILING ARBUTUS OR MAY FLOWER.

As pure and sweet as only childhood knows—
O'er moss embowered trailing Epigæas,
Clear as Diana's alabaster brow
Veiled with a delicate pink—sweet Epigæa:
Thy purity is stampt upon my heart
In "angel whiteness," and thy odorate breath
Redeems the grossness of the earth and links
Our senses to the spirit world beyond:
Thou seem'st a waif from some Pierian bower
Strayed to this rugged shore of terrene prose,
To beautify the spirit, and to bring
A light of other spheres o'er this dull planet;
A messenger of Beauty to adorn
And fortify the Ideal. On thy bosom
Young love reposes in Idalian hours,
When the warm Zephyr flings thy fragrant breath
Upon the pinions of delighted Spring,
Who flies too swiftly with her precious freight.
Emblem of shy, retiring Modesty,
Veiling thy beauty under russet leaves
In mossy dells. The crowding violets spring
Above thee all unconscious of thy presence,
And claim that incense which is due to thee;
But unambitious Virtue ever links
Its charm to the poetic instinct; ever holds
Refining influence o'er the heart, and cannot
Be ever shadowed by the prouder claims
Of more ambitious elegance. Fair Epigæa:
Of all departures of the lapsing Spring,
I sorrow most o'er thine; and in thy birth
I most rejoice when lenient Spring returns.

SOLOMON CONRAD.

MOSQUITOES.—A correspondent writes to *Nature* that carp are very fond of the larvæ of mosquitoes, and, as this fish thrives in the only kind of water in which the larvæ of the mosquito can live, he suggests that these fish might be employed to exterminate this pestiferous insect.

This is all very well so far as bodies of water are concerned; unfortunately the mosquito will breed in a few days in any little stagnant pool of water, though it may contain but a quart or so of liquid. It breeds probably more freely in swampy places, where water stands in little places of this kind, than it does in a larger body of water where fish dwell. Underdraining and getting rid of swamps, abolishing water barrels, and similar acts, would do a great deal more to abolish the mosquito pest than cultivating carp in ponds.

A GREEN-FLOWERED PETUNIA.—Recently a friend brought me flowers of a Petunia, the perianth of which was entirely green. The corolla was small and deeply five-lobed. In both size and texture it was scarcely distinguishable from calyx. The sexual organs were present, though extremely reduced in size; and with the stamens inserted on receptacle instead of on corolla, they seemed perfect. The flowers were such that the plant might be full of bloom, yet be supposed to be entirely devoid of flowers.

The plant bearing these singular flowers was a "sport" from a seedling purchased at our greenhouses last spring, bearing large purplish flowers, veined and bordered with green, such as are familiar with florists. For a time after being planted the normal flowers were produced freely, but at length the blooming ceased as my friend thought. Examination discovered the fact, however, that the plant had been blooming freely all the time, and complete flowers had been mistaken for calyxes—*Natura non saltus facit.* Here, however, is one of not a few exceptions to the rule.

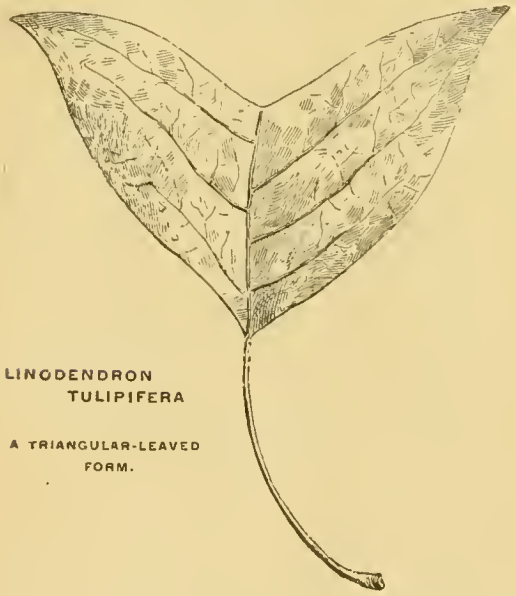
ERNEST WALKER,

New Albany, Ind., Nov. 14, 1891.

[Is there any real exception? It is now conceded—the conductor believes, that all growth—including the growth of forms, is rhythmic—that is, by leaps.]

BEES AND FLOWERS.—Because some one cut the petals from a blue Lobelia, and then found bees did not visit it afterwards, though there were honeyed secretions in the base of the flower, the opinion has been adduced that bees are guided to flowers solely by color in cases where flowers have no fragrance. But most American observers know that bees visit flowers that have neither color nor fragrance. In the Lobelia case the bee probably took the flower for a dead flower, which it knew from experience it was useless to vist. Bees are sensible creatures.

VARIATION IN THE LEAVES OF THE TULIP TREE.—Those familiar with nature know that variations in the leaves of plants are far greater than are generally supposed by the scientific botanists, who deal chiefly with dried specimens in the herbarium. Any careful examination of living plants will show how remarkably leaves vary from what might be termed the herbarium types. There is one tree, however, which is supposed to have very little variation in foliage, namely, the Tulip Poplar tree, and yet, when closely examined, it will be found quite as variable as any. It is not at all unfrequent to find trees with the leaves as absolutely free from lobing as the Magnolia,



LINODENDRON TULIPIFERA

A TRIANGULAR-LEAVED FORM.

and would be taken by most persons, not familiar with the Tulip tree in general, as a species of Magnolia. This entire lobed form was noted by Michaux, one of our earlier botanists, and named by him, Variety *integrifolia*. There is, however, a tendency to having the apex of the leaf somewhat truncate in all forms; this being a necessity of the conditions of venation. When we open a young bud of the Tulip tree, it may be seen that the apex of the leaf is pressed into the axil of the leaf, in such a manner that it cannot have the rounded form at the apex, which most leaves have; and there is little doubt that the particular truncation, which gives so much character to the Tulip tree leaf, is on account of this embryonic arrangement. Then again there is a great deal of difference in the lobes themselves, some being sharp, pointed, and some being rounded, and often the lobes vary in number. One of the most remarkable variations, however, that we have ever seen, is the one which we illustrate herewith; sent to us by Mr. Wheeler, of Lynn, N. C. We fancy that this form of variation must be exceedingly scarce; it is at least the only case that has been brought to our attention.

THE TRAVELS OF WEEDS.—In many parts in eastern United States a small Mexican weed, belonging to the order of Compositæ, called *Galinsoga parviflora*, is now extremely plentiful. It is also making headway in the old world. The foliage has a resemblance to the *Ageratum*, well known in gardens. The flowers are very small, the disc being yellow, and have five small ray-petals. It is strange to find a tropical plant thriving well so far north. It is destroyed by the first white frost, but as the seeds are not injured by the extremest cold, the plant is able to maintain its existence wherever it is able to mature its seed in summer time. It is for this reason that so many other tropical weeds, such as the Jamestown weed, or Stramonium, is able to extend itself. This is another tropical weed. The Balsam, *Impatiens fulva*, although spread over the whole North American continent, even penetrating the Arctic circle, was no doubt originally a tropical plant extending in the same manner as those we have referred to. Destroyed as they are very easily by frost, the seeds yet enable them to travel far into northern regions.

PLANTS POISONOUS TO CATTLE.—Our beautiful wood laurel (*Kalmia latifolia*), the sheep laurel (*K. angustifolia*) and many other plants have had the reputation of being poisonous to cattle. Chemists can find no toxic properties in these plants. We have always felt confident that such cattle die, perhaps from over-gorging, or from some other incident, just as a human being may perhaps die from over-eating oysters. It is now asserted that cattle are being poisone in California by feeding on Egyptian corn. N one will believe that the corn itself can be poisonous.

SPONTANEOUS GROWTH OF WEEDS.—It is really strange that there should be in these days any intelligent people who could bring themselves to believe that a plant could develop from a piece of dirt, without the agency of any seeds; yet we read it over and over again in papers which have a claim to a considerable degree of intelligence. Here we have before us in a leading Western paper, a long article to prove that this is so. The writer says, "you may take a field upon which grain or hay is grown continually for a score of years, let it lay off one year, and you have a field of mullein right where there had never been such a thing as mullein before." They do not spring from seeds he says, "but from a change in the surroundings, and these changes produce the different kinds of weeds." It is absurd he states to suppose that they ever grow from seed. It does not occur to this gentleman, that the mullein is a European plant, and was never known in America until Europeans came here, and it is strange that the thought did not occur to him, that the changed conditions ought to have produced mulleins without any reference to the coming to this country of the white man. The causes which induce the appearance of novelties, when larger and more vigorous plants are cut away to give them a chance to grow, are now so well known that it seems strange that such ideas as those we have referred to should be prevalent without editorial rebuke in intelligent papers. We trust to a wide circulation of MEEHANS' MONTHLY to dispel the darkness surrounding these topics.

THE HOUSE SPARROW UNDER GLASS.—The House Sparrow is a contented little chap, and pretty much at home under all conditions. Frequently on going into a greenhouse in the morning I have found them (one or two) contentedly hopping about among the plants. The ventilators were all down, and they were prisoners; but they were either not aware of the fact, or did not care. I was always careful not to frighten them, as I knew of no objection to their presence in the greenhouse; but rather thought it might be of mutual benefit.

One of these sparrows it seems has taken quite a fancy to living under glass, and during the fall managed to get cooped up every night. He soon became accustomed to the workmen passing to and fro during the day, and before long apparently lived most of the time in the greenhouse.

No evil was known of him until a short time ago. A lot of verbena-cuttings had been pricked out in "flats." On two mornings some of them were found pulled up. It was a mystery—until the sparrow was seen at the work. The cuttings pulled up were examined to see if it were insects he was after, but were found free from vermin. The herbage being fresh and tender the sparrow may have been "only gathering greens." Howbeit I was not at all pleased to find him showing so much taste for the greens I was growing for myself.

ERNEST WALKER.

SARRACENIA PURPUREA.—In peat swamps, and also in wet sands, the Pitcher Plant (*Sarracenia purpurea*) may be studied. The leaves are mostly purple or wine-colored, striped sometimes with brighter lines. A nest of these leaves, resting on the sphagnum, or among cranberry-vines, is an attractive sight, aside from the interest which this singular form excites. Every curve and swelling of the vasiform leaf and of the hood is perfect, in harmony with the flowing lines of beauty, and the eye lingers on a beautiful shape. In winter they are mostly filled to the brim with water or with ice. When the latter is the case, by removing the integument a complete model of the cavity is obtained in ice. The water is limpid and the ice clear, except at the bottom of the cavity where objects that have fallen in have settled. The repeated freezing and thawing to which the pitchers are subjected by change of temperature does not harm them, for the tissues are not torn, and they are ready to resume their function of catching insects in the spring, and continue until the plant is supplied with a new growth of leaves.—*Michigan Correspondence of Garden and Forest, page 232.*

SUGAR IN MUSHROOMS.—One of the most surprising discoveries of botanical chemistry made of late, is that glucose, which is grape sugar, is occasionally found in some parts o Mushrooms. What office it performs in the economy of the plant is now known. The *Gardener's Chronicle* says, "that Bourgulot, a French chemist, finds this sugar in the species called *Lactarias piferatus.*"

THE SEEDS OF INDIAN CORN.—The Indian corn is a grass, botanically known as *Zea Mays*, so named by Linnæus. Mays is the Paraguayan name,—it having been first introduced to European botanists from that country. Now grasses usually have the seeds or grain covered by chaff, known as glumes or pales answering to the calyx or bracts of the more showy flowering plants. But Indian corn is nearly exceptional in having very short glumes and pales, and hence the naked seeds or grains are very apparent. There is, however, reason to believe that this is not the primitive condition, but is an acquired character that has become hereditary. Mr. A. Blanc received some specimens from a correspondent, which seem a return to the original, and of which he had engravings made with which we illustrate this chapter.

INDIAN CORN, WHICH HAS DEVELOPED CHAFF.

In this state we see that it is similar in character to any ordinary grass. It is worthy of note that the male flowers, comprising what we generally know as the "tassel" have the glumes properly developed, and are precisely similar to these fertile flowers. The male flowers are arranged in two rows on each branchlet—usually four branchlets. If we draw these upwardly with the hand, we shall see exactly the resemblance to an eight rowed ear of corn. No one can fail to see that the ear of corn is nothing more than the tassel which has had power to unite its branchlets and become succulent! It is one of the most admirable lessons to the young student of nature, as showing how very distinct appearances are made on precisely the same plan, owing to mere variation in the power of union in the parts. These philosophical studies give zest to modern botany.

THE LOVE VINE.—Can any of our readers tell us to what wild flower of Florida the following extract refers to? It seems that we have heard Dodder called Love Vine, but not quite sure. When we commenced to read the paragraph we supposed it had relation to the Dodder, but when the writer speaks of green leaves, it evidently must be something very different. The correspondent of the *Florida Dispatch* says "it derives its name from a romantic tradition to the effect that if, when thrown over the shoulder behind a lover, desiring to know the feeling with which he is regarded by his charmer, and it lives and thrives where it falls, he may know that his suit will thrive also.

"On the other hand, should the vine fail to live and prosper, the suitor may make up his mind to sure disappointment. It is said to be an Indian legend, the tradition to which we refer, but the Creole girls and boys in the vicinity of the Chifunctee River, near Covington, religiously believe in the vine and its significance. The most remarkable thing about the Love Vine, however, is the fact that it has no roots, but grows spontaneously on vines, bushes, shrubbery and the like. It has even been known to flourish on a bed of shavings where there was a certain amount of moisture existing beneath, and without any contact whatever with the ground, thus living upon atmospheric air alone.

"It has the flexibility of smilax, and in the color of its leaves resembles it. It is said to bear a little faint blue flower, but we never chanced to see one of these vines in bloom." As a rule it is like chasing a "Jack O'Lanterns" to hunt up and identify plants with local names.

GENERAL GARDENING.

PLANT A TREE.

He who plants a tree
Plants a hope.
Rootlets up through fibers blindly grope;
Leaves unfold into horizons free.
So man's life must climb
From the clods of time
Unto heavens sublime.
Canst thou prophesy, thou little tree,
What the glory of thy boughs shall be?

He who plants a tree
Plants a joy;
Plants a comfort that will never cloy.
Every day a fresh reality,
Beautiful and strong,
To whose shelter throng
Creatures blithe with song.
If thou couldst but know, thou happy tree,
Of the bliss that shall inhabit thee.

LUCY LARCOM.

IVY ON WALLS.—A friend recently called attention to a case which he thought subverted our view, that the ivy growing on walls tended to make them dry rather than damp. On looking at the case, we find that the wall was covered with the *Ampelopsis Veitchii*, or as it is called, Japan Ivy, and that the vines had been suffered to grow over the shingle roof of the house some four or five feet from the gable end, and that the spouts and other water conduits were completely choked by this growth of vine and filling up with leaves. It is no wonder that a house should be damp under such circumstances. It should not be forgotten that the vines on walls must never be allowed to reach the roof or clamber in the gutters, but must be confined entirely to the vertical surface of the walls on which they grow. The innumerable number of small rootlets absorbing moisture continually, generally make walls so dry and hard that it has been found at times in the old world, when necessary to take down a building, almost impossible to do so, on account of the extreme hardness of the mortar, which has been kept dry for so many years through the agency of these roots. The case we have referred to, shows how often a good idea may be spoilt by reason of the thoughtless manner in which the idea is carried out.

GETTING WHITEWASH OFF OF GLASS.—A little sulphuric acid added to a pail of soft water, enough, say, to make it about as sour as weak vinegar, greatly assists in washing the whitewash shading from the glass in fall, in case it does not come off in time of its own accord.

The whitewash is put on as a hydrate of lime. After a time it is converted into a carbonate by the action of the carbonic acid of the air. The sulphuric acid facilitates removing it by decomposing the carbonate and forming sulphate. The lime on the glass neutralizes the acid, so that there can be no harm in the practice recommended, unless too much acid be used.

I used this method of removing whitewash from the glass of some of the greenhouses this fall and found it worked admirably. A mop or brush on a pole may be used. The labor is reduced to a minimum by rubbing each spot moistened immediately, washing the product off with a syringe or hose, if necessary to have the glass clean at once. If not, it may be left for the rain to remove.

The persistency of the whitewash on the glass is due to using the lime too fresh. Air slaked lime makes a wash that comes off readily—too readily. But it is better to apply the wash several times if necessary than to use a wash that will prove very troublesome to remove.

The *Gardeners' Monthly* recommended naphtha and white lead of the consistency of milk as a greenhouse shade, but this does not come off without the help of lye, they say who use it. It is a lighter shade than is ordinarily made with whitewash. ERNEST WALKER.

A NEW ROSE, QUEEN NATALIA.—The German "Rosen-Zeitung" considers this new rose worthy of a colored plate. It is of a creamy color, with a buff tint; the flowers are large and full. It is described as being a valuable addition to the list of tea roses.

Popularity of the Carnation.—The old home of the carnation is on the walls of castles, and other famous buildings in Great Britain. It is a single white-fringed flower, comparatively small, and far from being showy, but always attracted attention on account of its remarkably sweet odor. It is said that when the Romans invaded Britain, they were so struck by its sweetness, that it was carried to Rome, and by the Roman florists vastly improved ; this was the first given of the cultivation of the carnation. It soon became very popular, and was used extensively in making wreaths and garlands to crown the gods on festival days, and to be worn as chaplets by conquerors and others, on great occasions. It was called the flower of the gods, in consequence of this popular use. Our botanical name *Dianthus*, literally expresses this fact. It is worthy of note, that, although having been in cultivation for nearly 2000 years, it still retains its great hold on popular affection ; indeed, its popularity has grown remarkably since a variety was introduced several years ago, which continued flowering during the latter part of the season. This was owing to the production of branching stems from the flower shoots. The carnation of the last century did not do this ; it simply threw up a flower spike, produced its large and sweet flowers at the apex, and then was done for the season ; but, as soon as it commenced to throw out flower shoots from every joint, the class known as "winter blooming" was introduced. This has added so immensely to its popularity, that now large houses are wholly devoted to the culture of the winter blooming carnation, and in spite of all the love that has been showered on the rose, as a popular favorite, the carnation stands its ground as an able competitor. There have been societies and periodicals devoted wholly to the encouragement of rose culture, and now the carnation has entered as a rival even in this field, and a society has been formed devoted especially to its interests. During the past few months a national Carnation Society has had its birth in Philadelphia, and promises to be quite as popular and as successful as any rose society ever was. There is a large field yet for improvement. At present there is no especial type to which the carnation improver breeds, everything seeming to be left to haphazard, and the momentary popular taste. The great effort with florists principally being, to produce a kind that will produce an enormous quantity of bloom, at the smallest possible cost. There is no doubt, however, that under the encouragement which such a society will give it, we may look eventually for beautiful forms and characteristics in these flowers, which no one is thinking of at the present time.

Violet Diseases.—A correspondent from New York city refers to the fungus which is so great a pest of the grower of the violet. Before the leaves are half mature brown blotches appear on them and frequently destroy the whole leaf. Where this fungus is very bad it is a fearful pest to the violet grower. Considering how much has been developed in our pages and elsewhere of late in regard to the use of sulphate of copper, or blue copperas, as a solution, it is surprising that it has not been applied to this case of the violet. There can be little doubt but if the beds of violets were sprayed with this solution in the very early stages of growth in the fall, it would be a complete remedy against the ravages of this scourge.

Bacteria and Plant Disease.—In many diseases of plants, bacteria, as small microorganisms are called, are so often found and seem so closely allied to the diseases, that many close students have come to regard them as the sole cause of disease. Though the general tendency of scientific thought has been in this direction, the fact has by no means been demonstrated. The best that can be said of this belief is, that there is great probability that it is correct. But occasionally there are facts which bear on the other side. Dr. Woolford is quoted as saying that between the sound portion of teeth, and that in which bacteria are found is always a portion softening in which no bacteria are found. These organisms follow and do not cause decay in teeth, though Dr. W. believes they hasten decay, and should be zealously combatted by those who would preserve their teeth. If this is good science in dentistry, it may be equally good in regard to bacterial phenomena everywhere,—in plants as well as in animals. It may be that they hasten disease in plants, though not directly engendering it.

GRAFTED STANDARDS IN GARDENING.—To those who visit the old world the "Standard" roses of the gardens present a beautiful picture never to be forgotten. These are grafted on the wild briar, *Rosa canina*, and are about as high as one's shoulder. Unfortunately these will not thrive in America, except in quite special cases. But we neglect many things which we might have of a similar character, and especially among this class are the Tree Wistaria, and Tree Trumpet Vine, an illustration of the latter of which we append. It is only necessary to train these to stout stakes, cutting them back to about six or eight feet. By the time these stakes rot the plants are self-supporting.

A TREE TRUMPET VINE.--FLOWERS SCARLET.

TREES IN CITY SMOKE.—Few people have any idea of the great amount of injury done to trees in the cities by bituminous smoke. For many years Philadelphia was free from smoke, in consequence of the use of anthracite coal. Of late years bituminous coal has been largely introduced, and we recently saw a long row of beautiful Norway Maples, which had continued in perfection for many years until surrounded by bituminous coal smoke, now almost utterly ruined. As it is now so easy to consume smoke, it is surprising that any city should allow manufactories to poison the whole atmosphere in this way. There was some excuse when smoke consuming was difficult, but there is no excuse for it now.

ROOTS IN DRAINS.—Recently, in the yard of a public school in Philadelphia, a drain from the out-buildings was found to be choked, and on examination a little root of a maple tree had been found to penetrate a very small pore in the terra cotta pipe; yet so rapidly did these roots increase, after they found there was plenty of food at command in the drain, that although the pipe was eight inches in diameter, several bucketfuls of small fibrous roots were taken out, and which had completely choked all circulation through the drain. It was a wonderful example of the increase of roots, under circumstances favorable through the abundance of food. It is said that in this case no trouble is anticipated in future years, as it is believed that a bucketful or two of salt brine, passed through the drain once or twice a year, will effectually scorch off any fibers that may attempt the same frolic in future. Where, however, this remedy cannot be applied, it will be a caution not to have drains in the vicinity of the roots of trees.

OSAGE HEDGES.—In the best farm districts of Pennsylvania the progressive farmer still sticks to the osage orange fence. They are by all odds the cheapest, but the leading objection is the robbing of the earth by the roots. The roots of trees grow no further away than the top is allowed to grow. A well-managed hedge only throws out the roots to about ten feet on each side. But even this is begrudged by a good farmer, who can plough to within two or three feet of a post and rail fence. The Chester county farmer uses a corn-knife or hook to trim the hedges. They are cut twice a year—hay time and harvest. A man can cut a mile a day.

THE WHITE SNOWBERRY.—We noted recently the great value for special effects in landscape gardening of the red snowberry, and now illustrate its only ally in the Atlantic States — the White Snowberry, *Symphoricarpus racemosus*. Its habit is less striking than that of the red snowberry,—and masses have to be planted closely in order to have good results.

WHITE SNOWBERRY.

But the pure white berries, which continue perfect till frost destroys them, give the plant a peculiar interest in autumn garden scenery. Our drawing was made from plants growing in "Upsala" the beautiful family estate of the Johnsons in Germantown.

BORDEAUX MIXTURE.—The exact proportions of this mixture are given as water 100 parts, sulphate of copper two parts, and lime two parts. We have never been able to understand what the lime was for; at any rate in our own experience lime is not used, while the mixture seems to be entirely effective in destroying the small funguses. It is said to be of great value in the old world in destroying the fungus which causes the potato disease.

PONTEDERIA CRASSIPES. — Visitors to the famous horticultural department of Fairmount Park, Philadelphia, the past year or two have been interested in the pond plants introduced by Chief Miller, and especially of one which we illustrate on page 13, known botanically as *Pontederia crassipes* by the older authors, though removed to *Eichornia* by moderns, through being thought different from the Pickerel weed of northern rivers, which still bears the original name. The leaf stalks are puffed out like bladders on which the ovate leaf blades are borne. The violet flowers are very pretty, but the interest is chiefly showered on the bloated leaf stalks.

The plants grow on smooth-water lagoons along Brazilian rivers, and often in masses acres in extent, effectually obstructing navigation of smaller vessels. The seeds of most water plants sink, and germinate in the mud. The remarkable feature of this plant is, that the seeds, encompassed by a gelatinous matter, float and sprout on the water's surface! The young plants are as thick as hops when they sprout, but the development of these bulbous petioles pushes each plant away from the other, and thus enforces room for each plant to grow. It is undoubtedly the function assigned to these structures, and not as mere floats as assumed by other authors. It is another instance of the enormous power of the growth force in plants. It might not take much effort in one plant to push a dozen or so into clear water, but imagine one little plant in the middle of an acre, successfully pushing away millions of others! Truly nature is a stupendous mystery.

GRASS UNDER TREES.—It is often very difficult to get grass to grow under the shade of trees, and yet in places where something green to cover the ground is very desirable, a number of plants have been named as being adapted for furnishing these green surfaces. The common Periwinkle is one of the best known; another excellent thing is some of the species of Hypericum; two European species, *H. calycinum* and *H. androsmæfolium*, thrive particularly in these comparatively dry and shady places. Another very fine thing is the Japanese Honeysuckle. It keeps very low, and perhaps is a better substitute for grass than many of the others named. There are two forms which can be employed for this purpose; one, frequently known in catalogues as Halliana, and the other form as the *L. brachybotria*; this is more generally known as the Japanese evergreen honeysuckle, although the varieties are all more or less evergreen. This particular one is more fond of trailing than the others.

DARWIN TULIPS.—It is said that the eminent bulb grower, Krelage, of Holland, has introduced an entirely new race of tulips, wholly different from anything that has been introduced before, and presenting extremely striking objects. In compliment to the great naturalist, the race has been called Darwin Tulips. A number of these varieties have been named in honor of distinguished Americans. We notice that one has been named in honor of the senior editor of this magazine. It is described as a very rich brown. The prices of all these great novelties are attached to each variety, and the editor notices that his bulb is not so high priced as some of those named in honor of his associates, whereat he is inclined to be somewhat jealous; but he is comforted by the fact that the high priced novelties are not always those which are the best and become the most popular.

THE BERMUDA LILY.—When we remember that it is scarcely a dozen years ago when Mr. Harris, a florist of Philadelphia, first sent to the Germantown Horticultural Society a single plant of this lily, it is astonishing to learn that the trade in these plants now reaches throughout the world to nearly a million of dollars annually. It is simply a variety of a Japan species, *Lilium longifolium*, but which has been found to grow to better advantage in Bermuda than in its native country. The Bermuda florists, however, are complaining that the business is overdone, and although they reaped enormous profits for a few years, the quantity raised now is producing a glut in the market.

THE EUROPEAN PLANE.—This tree has been hitherto entirely free from any destructive disease. In America the Buttonwood disease, as it is generally understood, attacks the American form in the early spring, giving to the tree the appearance of having been injured by a white frost. The *Illustration Horticole* states that in Ghent the European are now suffering, but in this case the leaves fall early in the autumn. The fungus which causes this is called *Glœosporium nervisequum*. Our Prof. Farlow, of Boston, is inclined to the opinion that this is only one of the stages of the same fungus that causes the spring disease in our Buttonwood. Sulphate of copper is suggested as a specific against the action of the fungus.

FRUITS AND VEGETABLES.

POTATOES A LA FRANCAISE.—Bills of fare which we find at fashionable dinner parties, are becoming a nuisance, by reason of the almost total adoption of French names for the commonest things. A boiled sweet potato has to be simply "Yam au natural," and so on through the whole list. It would not be so bad if the articles, pretended to be French, or of some other nationality, were really such as the French or these nationalists would present to us; especially is the case with what we find on the bills as *Pommes de Terre a la Francaise*, which simply means small potatoes as served up with various dishes, or simply whole potatoes that have not been allowed to get mature, and are usually of some special varieties which produce abundant tubers and never get to a very large size. They have a particular waxy character at this stage, which, when served up with the various preparations, as the French prepare them, are perfectly delicious with various meats; but our sham "French" have been cut out and rounded from the large mature mealy tubers, and are just as unlike the French article as anything possibly can be. They are frauds of the most outrageous character, and only make one smile at their long French names, as given in the bill. Now we do think that there is a great opportunity here for American improvers of the potato; let them try to get some form that will produce a very large number of small size, and we think that a fortune will result to the successful discoverer. In France these potatoes are by no means always round; a variety called the Ash-leaved Kidney is in general use for these particular French dishes.

WORDEN'S SECKEL PEAR.—Smith & Powell, Syracuse, send us samples of this new pear. It is about the size, and has the rich cheery look of the famous Seckel, though we do not detect any similarity in the flavor. It is however a very desirable variety, coming into use later than the Seckel, and of a very pleasant taste. Very large pears are not the most desirable for table use; such as this, when excellent in other respects, have an additional recommendation in the smaller size.

Tomato Culture.—It has been noted that where tomatoes can be raised on trellises, or some other support from the ground, nearly double the quantity can be raised from an acre than where they are suffered to trail on the ground. Rain and unfavorable weather especially, is a great drawback to this trailing method of production. It does not seem to be generally known that one of the best trellises for the tomato plant is a comparatively short straight stick, with short snags or spurs up and down it. A smooth straight stick will not permit the vines to be held up without slipping. Wherever these heavy rough sticks can be easily obtained, they will be found to add enormously to the value of the crop. Those, however, who have a little ingenuity could use smooth sticks, by first wrapping the tying material once around the stick before tying up the vines; this prevents the tying material from slipping down. Another advantage of this method of tying to straight stems is the advantage which it gives the plant for light in every direction, and; again, another advantage is afforded by a much longer period for the cultivation of the soil, more than can be done when the plants are left to trail on the ground. We have known as much as a bushel of tomatoes to be obtained from a single plant, in good rich soil, that had been trained in this way to upright sticks. The sticks should be planted before the plants are set out, so that they can be put firmly in the ground without destroying the plant; just, in fact, as we do with the Lima bean. We feel sure that those cultivators who desire to be in advance in making money out of their market gardens would derive great profit from attention to the suggestion herein made.

Bees Destroying Fruit. A correspondent of the *Prairie Farmer* states that bees never attack grapes except when they are very ripe and easily broken off the stem, and asks why begrudge them a small pittance? This question may be answered to his liking by those who keep the bees and get the honey; but when it is your neighbors' bees destroying probably all your crop, it is quite another matter. We know it to be the fact in small gardens in the suburbs of Philadelphia, where the owner may have but a dozen or so of grape-vines, that it is not unfrequent to have the whole crop carried away by some neighboring bees. It is useless to say that birds or wasps first make the hole for the bee, because only for the bees the small hole, if any, made by other creatures, would not in the slightest degree affect the perfection of the crop.

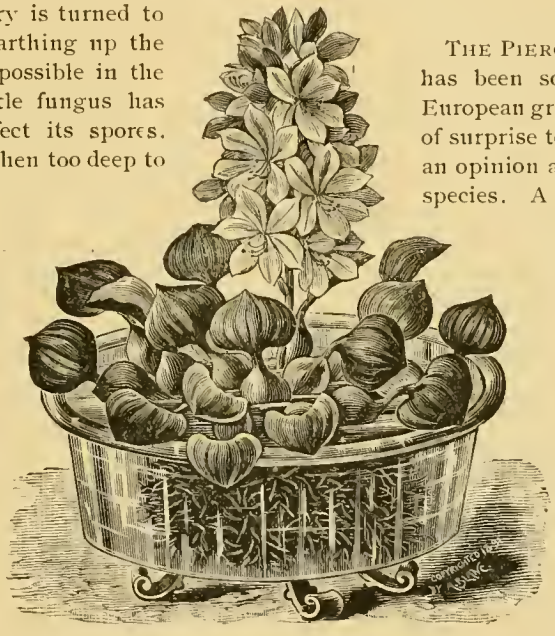
The Windsor Cherry.—It is now near a quarter of a century since this cherry was introduced by Mr. James Dougall at Windsor in Canada, just across the lake from Detroit, where the Conductor saw at that time the original tree. It comes in about the middle of the cherry season, and has proved as reliable as the well known and well tested Black Tartarian, and will outlive many of the newer kinds introduced since its first appearance.

Lima Bean Poles.—Few things are more profitable to the market gardener that the lima bean, and even in the unpretentious gardens of the amateur no vegetable gives so much satisfaction to grow. Possibly the reason why the lima bean grower is better paid for his crops than the grower of other vegetables, is on account of the difficulty to get poles for the vine to run on. This of course prevents competition to the extent that it does when there is no difficulty to overcome. The *Popular Gardening* gives an illustration of the plan by which poles may be saved. Any light rods, like, for instance, a long broom handle, which would be too smooth for the ordinary vine to hold fast to, is employed and placed in the center of a place occupied by four hills, the hills being about three feet away from the base of the pole; a string is then led from each hill to the top of the pole, so that one pole does for four hills. The vines are represented traveling up the strings. When the growth is completed, each set of poles looks like a shelter tent. The lima bean usually requires something stronger than a tender twine to attach its strong coils around, and we should not have supposed that they would climb up these slender supports very readily. But as the cut and description is said to be from an actual case, we take it for granted that it is thoroughly practicable.

THE POTATO DISEASE.—As intelligent readers know, what is called the potato disease is the action of a minute fungus. It has only recently been discovered that the spores of this fungus do not penetrate the interior of the plant. They mature on the leaves where the attack is first made, and then are carried down the stems by rains to the tubers where they germinate, and in that way cause the potatoes to rot. Among the most valuable of recent discoveries is the fact that these spores seldom penetrate over four inches in the ground, so that tubers which are that distance from the surface rarely become affected by the disease. This valuable discovery is turned to practical account by earthing up the potatoes as early as possible in the season, before the little fungus has had a chance to perfect its spores. The potato tubers are then too deep to be seriously affected.

TYING ASPARAGUS.—In the preparation of vegetables for market a minute or two gained on each handling aids very largely in the profits of the producer. In raising asparagus, for instance, the tying of the bunches takes considerable time, and this will sometimes make all the difference between the profit and loss in the raising of it. The latest invention is to use Indian rubber bands for tying, which can be slipped on in a moment. It is said that since the introduction of this by some of the larger growers profits have been largely increased. A band is fixed around a ring, and the bunch of asparagus slipped into the ring; the band is then drawn over the bunch, two bands being used for one bunch. It is said to take but a moment to tie up a bunch in this manner.

DESTRUCTION OF INSECTS AND VERMIN.—It is rather remarkable, considering how long phosphorus paste has been known in the destruction of insects, that it is not more generally employed. There is scarcely an insect but is fond of its taste, while it is thorough destruction to all of them. For rats and mice it has long been known to be a success in ridding buildings of the pest. All that is necessary is to spread a little of the paste on a piece of bread and butter and place it where the insects can get at it. Of course, it is necessary to guard against the destruction of creatures that we would protect rather than injure. So far as that is concerned, every one one knows that, in the application of poisons, care is necessary not to do more than we desire to do. J. F. M.



PONTEDERIA CRASSIPS.—FLOWERS VIOLET.
SEE PAGE 10.

THE PIERCE GRAPE.—California has been so successful with the European grape that it was a matter of surprise to us, to have sent for an opinion a variety of our native species. A crate reached us early in October, with bunches of a very pretty brownish black variety, and when we say that the flavor was quite as good as that of the Catawba in its best days, it is saying a great deal in its favor. This variety was said to have originated as a sport from the Isabella in Santa Clara county in California, by the gentleman whose name it bears. There is no doubt but what some time or another Californian vineyards, planted with the foreign varieties, will eventually suffer from phylloxera as do the grapevines of the old world. It seems wise, therefore, in California fruit growers to be be looking out for first-class varieties from our native grapes.

THE GREEN MOUNTAIN GRAPE.—Specimens of this grape were received from Messrs. Stephen Hoyt's Sons some time since. This grape is a very good addition to the list of grapes, notwithstanding the number of good varieties is already large.

BIOGRAPHY AND LITERATURE.

WASTED LIVES.

The world is too much with us; late and soon,
Getting and spending we lay waste our powers,
Little we see in Nature that is ours;
We have given our hearts away—a sordid boon?

—— WORDSWORTH.

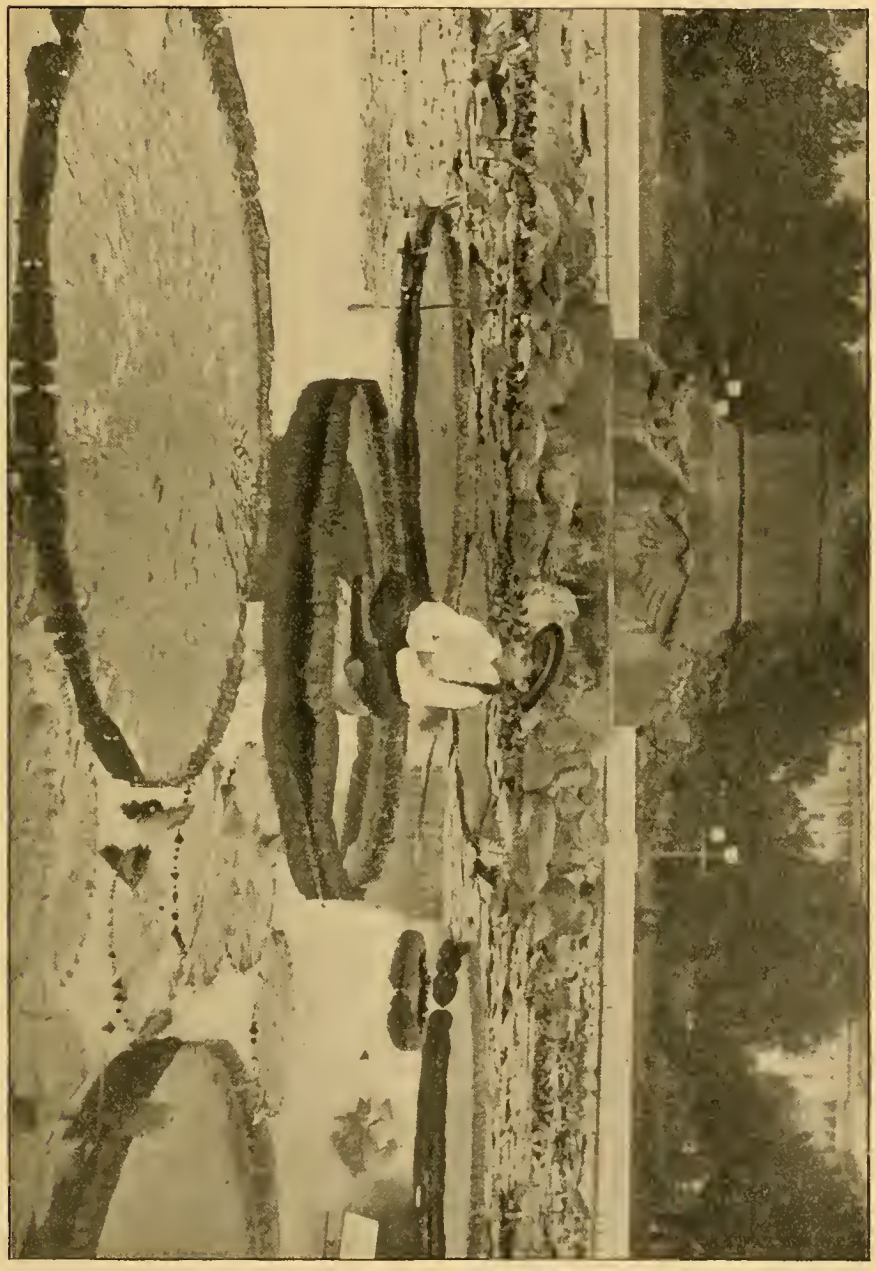
CALEB COPE—THE VICTORIA REGIA.—The Victoria Regia, a famous water lily of the Amazon river, flowering in the open air in the botanical garden at Washington, D. C., as photographed by Dr. W. H. Seaman, reminds us of the great interest taken in the plant when it first flowered in America some forty years ago on the grounds of the late Caleb Cope, near Philadelphia. Thousands flocked to see it. At that time it was thought impossible to cultivate it without an immense expenditure. It cost Mr. Cope several thousands to build and thoroughly equip the house in which it was grown. Subsequently, J. Fiske Allen of Salem, and D. Waldo Lincoln of Worcester, grew them, all at considerable cost. Mr. Sturtevant of Bordentown, showed a few years ago, that with no great cost it could be grown out in our American summers,—and since then it has been successfully grown out in a number of places. One of the most interesting features of the plant is the turning up of the edges of the leaves, when they become very large. This gives them an additional buoyancy. The venation of the leaves is particularly arranged for strength, and indeed it was this which suggested to Sir Joseph Paxton the method on which to construct the roof of the first crystal palace, after the rules of all modern architecture had failed. As shown in the picture, the turned up leaves will readily support a large child.

——

S. S. JACKSON.—We recently called attention to the fact of Mr. Jackson, of Cincinnati, being probably the oldest living nurseryman in the United States. The Cincinnati papers have a long account of the celebration of his 65th wedding anniversary, which occurred recently. The accounts give some additional facts, in connection with Mr. Jackson's horticultural career. He appears to have been the first to introduce in Cincinnati the rhubarb, or pie-plant, as it is called, into general cultivation. In that city no one would buy it when he first introduced it, and he had to cook it and give his customers the rhubarb pie before they would purchase the stalks for themselves. Mr. Jackson was 89 at this celebration, and Mrs. Jackson 85. Notwithstanding his great age, Mr. Jackson occupies himself daily in the work of his nursery, and especially in the workshop, where he is fond of experimenting with horticultural and other inventions. Among the treasures which the family values is a half-bushel measure, which was used by Mr. Jackson's father while in trade in Philadelphia, and from which it appears that, at that time, Benjamin Franklin held the office of sealer of weights and measures,—his name being stamped on the bottom of the measure. A city directory of Philadelphia is also in his possession, showing that at that time, when the Jacksons lived there, the city of over a million inhabitants now had then only 6000. In the directory is one name, as follows: Franklin, Benjamin, and his profession given as "His Excellency;" the address, No. 1 Franklin's Court.

——

WILLIAM SAUNDERS.—It should not be forgotten that the National Cemetery at Gettysburg is the work of this gentleman, still at the head of the Experimental Gardens at Washington. Now that the trees in the National Cemetery have grown up, the design of the artist is more apparent from year to year, and it is conceded to be one of the most appropriate military cemetery designs in the Union. One would scarcely imagine it, from usual experience, to be a graveyard, and yet the surrounding associations all tell plainly for what purpose it was designed. Copies have been attempted in other localities, but have not succeeded for want of noting that the design and the character of the grounds and surroundings are intimately connected.



VICTORIA REGIA.--SHOWING UPTURNED EDGES OF THE LEAVES.--SEE PAGE 14.

GENERAL NOTES.

ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA.—At the meeting of the Academy of Natural Sciences of Philadelphia for nominating officers for the coming year, Mr. Thomas Meehan was unanimously named for the Presidency in the place of Dr. Joseph Leidy, deceased. A letter was read from Mr. Meehan declining the honor, should it be offered him, on the ground that the many matters of public concern in which he continued to take a warm interest left him no time to perform the duties which the honor brought with it; the business affairs of the Academy especially having assumed vast proportions during the few past years. Objection was made to this that Mr. Meehan's well known devotion to the Academy and to science generally would lead the community to believe that the Academy had failed to recognize his claim to the honor,—and this paragraph is inserted that justice may be done to the kind members of that body. On Mr. Meehan's declination General Isaac Wistar, a well known mining engineer and geologist for a long time President of the Board of Trustees of the Building Fund of the Academy, was unanimously nominated for the position. Mr. Meehan and Rev. Dr. Henry C. McCook, who for many years past have been annually elected as Vice-Presidents, were again placed in nomination for next year.

PEACH YELLOWS LAW.—An extremely absurd law against the yellows, was passed by the Legislature of Pennsylvania last year. On the application of any citizen that the yellows exist in any county, the court can employ commissioners at $2 a day and expenses, in order to go around, examine peach orchards and order the trees rooted up. In one of the counties of the State, this course was attempted recently, and commissioners appointed, and the first thing they did was to apply to a gentleman, supposed to be versed in such matters, as to how they were to know the disease when they saw it!

PROTECTING OUR COLORED PLATE.—Our beautiful colored plate of some American wild flower being so prominent a feature of the magazine, we were much embarrassed in our earlier issues by the decision of the Philadelphia post office that separate pasteboard guards subjected the magazine to high postage rates. A subscriber, Mr. Tillinghast, of Greenport, N. Y., having official post office experience drew the attention of the Washington officials to the matter, and the local decision has been reversed.

We have already arranged with our lithographers to print the plates for the coming year following the February number on paper that will not crack so easily, and with this month recommence the pasteboard guards.

We are sure our subscribers who have so handsomely supported us in our endeavor to establish a magazine of a character so superior that even regular publishers shrank from the cost, will rejoice with us that our only shadow of anxiety has been dispelled, and join in sincerely thanking Mr. Tillinghast for his friendly services.

OUR SIXTEEN PAGES OF TEXT.—We regretted when arranging the plan of our magazine that, considering the great cost of the colored plate, we were not justified in giving more than sixteen pages of text. It will, however, we think, be noted that by the system of condensation adopted by our writers quite as much genuine information is afforded as though we had employed double the pages on the usual diffuse plan. We are beginning to feel that it is a merit, as saving the reader's time, that only sixteen pages are given.

OUR FEBRUARY PLATE.—It is not generally known that swamp trees and shrubs do better in dry ground than in their own native places, and that many of such deserve general cultivation. One of the most desirable of these is the *Azalea viscosa*, a plant as deliciously scented as it is very beautiful. We have selected this for our February plate.

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The leading chapter in MEEHANS' MONTHLY, with the colored plate, comprise one of the chapters so prepared, and there is therefore no need of explaining what was the scope of that publication.

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AZALEA NUDIFLORA.

WOOD HONEYSUCKLE.

NATURAL ORDER, ERICACEÆ.

AZALEA NUDIFLORA, Linnæus.—Stem two to four or six feet high, much branched toward the summit; young branches hairy; leaves lanceolate, two to three inches long, crowded at the extremity of the branches, margis hairy, pubescent beneath, petioles one-quarter to one-half inch in length; flowers somewhat hairy and slightly clammy, rather preceding the leaves; corolla varying from pale flesh color to pink and bright purple,—the tube scarcely longer than the lobes; stamens much inserted. (Darlington's *Flora Cestnica*. See also Gray's *Manual of the Botany of the Northern United States*, Chapman's *Flora of the Southern United States*, and Wood's *Class Book of Botany*.)

In Whittier's "Drovers" he makes the cattle tenders describe their daily duties. Among other things they say:

"We've sought them where, in warmest nooks,
The freshest feed is growing,
By sweetest springs and clearest brooks
Through honeysuckle flowing;
Wherever hillsides, sloping south,
Are bright with early grasses,
Or tracking green the lowland's drouth,
The mountain streamlet passes."

All who have had the opportunity of studying the Wood Honeysuckle in the places it loves best will recognize, in the pretty picture the poet paints, how well he has represented the habits of the plant. We do not often find it where the "lowland's drouth" prevails, but in the cooler recesses of the woods,—on hill-sides, but only those hill-sides which have a comparatively cool and shady surface,—made cool either by the heavy mass of decaying tree leaves covering the surface, or by the atmospheric moisture from the "sweetest springs and clearest brooks," with which they love to associate. And yet the name given to the genus by Linnæus, *Azalea*, means in Greek, dry; and our text books tell us the name was given to these plants because they "love to grow in dry places." Alluding to this, Dr. Darlington says, in the work from which we have taken our description, because the specimen for drawing was taken from near the locality covered by his work, "Azalea, arid; from a mistaken idea that it belongs to a dry soil." But it is the old story over again that names which might be expressive enough when first applied come in time to have other meanings, and unless we go back to the origin, rather tend to mislead. Our Wood Honeysuckle does not seem to have been known to Linnæus when he made the genus. He found a curious assemblage of plants named by Tournefort, his chief predecessor in botanical eminence, *Chamæ-rhododendron*—literally, dwarf rhododendron. Linnæus noted that the plants he afterwards called *Azalea* had but five stamens, while the *Rhododendron* had ten, and chiefly on this fact he divided them. The one he had particularly in mind was what is now *Azalea Lapponica*, which he tells us in his "Flora Lapponica" grows in the Alps of Lapland, and in dry and very arid places; and it was from this fact that the name was suggested to him. Not knowing this fact, and looking only to the habits of some of our American species, the name would certainly seem inappropriate. One species, the *Azalea viscosa*, grows in boggy places,—and the sweet white flowers, resembling in form and odor the celebrated Honeysuckle of Europe, evidently suggested the common name. That species was sent to Europe by the celebrated Virginian collector, David Banister, and is figured by Leonard Plukenet in his great work. Linnæus and some of the earlier botanists confounded this with our present species, and much of what we read of one in their works relates to the other. Plukenet, however, in the appendix to his works, notes that he then knew of another kind with "larger

and less sweet" flowers, which was evidently *Azalea nudiflora*. Among the first notices referring unmistakably to our plant is that in Kalm's Travels, published in English in 1771. He says, starting out from Philadelphia, "The Mayflower, as the Swedes call them, were plentiful in the woods when I went out to-day, especially on a dry soil, or one that is somewhat moist. The Swedes have given them the name because they are in full bloom in May. Some of the Swedes and the Dutch call them Pinxterbloem (Whitsunday-flower), as they really are in bloom about Whitsuntide; and at a distance they have some similarity to the Honeysuckle or Lonicera. Dr. Linnæus and other botanists call it an *Azalea*. Its flowers were now open, and added a new ornament to the woods, being little inferior to the flowers of the Honeysuckle and Hedysarum. They sit in a circle round the stem's extremity, and have either a dark red or a lively red color; but by standing for some time the sun bleaches them, and at last they get to a whitish hue. I do not know why Colden calls them yellow. The height of the bush is not always alike; some were as tall as a full grown man, others but low, and some were not above a palm from the ground; yet they were all full of flowers. The people have not yet found that this plant may be found of any use; they only gather the flowers and put them in pots, because they are very showy. They have some smell, but I cannot say it is very pleasant. However, the beauty of the flower entitles them to a place in every flower garden." It may be noted here that in Kalm's time what we now know as *Hedysarum coronarium*, an Italian plant of the Leguminose family, was cultivated in gardens for its odor, and known as the "French Honeysuckle." The progress of science is well shown by the fact that the early American botanists classed it with the Rock-roses,—calling it a Cistus, to which our common *Helianthemum* belongs. Colden and Catesby both refer to it as Cistus, a genus to which in the earlier times the *Kalmia* itself was referred. Most of them noted the appearance of the flowers before the leaves were well advanced,—flowering on a naked scape,—and it was from this observation that the specific name, *nudiflora*, or naked-flowered, is derived. As already noted, Linnæus divided the genus chiefly on the number of stamens,—but botanists who followed soon after him found that this was a poor distinctive mark. Pursh, in his "Flora of North America," published in 1814, records that he found a variety near Philadelphia which had "from ten to twenty" stamens instead of five, as required by its Linnæan generic character, which, he observes, "proves clearly that Azalea and Rhododendron are one genus, *Azalea procumbens* excluded, as Rhododendron is frequently found with less than ten, and all the species of Azalea with more than five stamens." The aspects of *Azalea* and *Rhododendron* are, however, so different that the authors of all our botanical text books have kept them separate, and this example has been followed here. In the *Botany of California*, issued in 1876, they are, however, thrown together, following the lead of Hooker, the authors remarking, "Rhododendrons and Azaleas, although different enough as to our common species, are quite undistinguishable when the whole are taken into view." Professor Asa Gray, in his *Synoptical Flora of North America*, also drops the name *Azalea* for the original *Rhododendron*.

As already noted, *Azalea viscosa* was introduced to England by Banister, through whom it was received by Dr. Compton, the Bishop of London, to whose graciousness Plukenet acknowledges the privilege of making a drawing by his own hand. The knowledge of ours from living plants seems to have to go with so many others to the indefatigable Collinson, through his famous correspondent, John Bartram. In a letter written by Peter Collinson, to Cadwallader Colden, of New York, dated Ridgeway House (near London), February 25, 1764, he says to his American correspondent, "I am here, retired to my sweet and calm old mansion, and from its high elevation look forty to fifty miles round me on the busy vain world below; envying no man, but truly thankful for the undeserved blessings good Providence hath pleased to confer on me." Then he proceeds as if walking through his grounds in company with his distant friend, giving the history of all of them. "This Cypress" is from this one; "that Fir" from another,—and then he proceeds to say, "Regard the variety of trees and shrubs in this plantation, as Mountain Magnolia, Sarsifax, Rhododendrons, Kalmias, Azaleas, &c.; all are the bounty of my curious botanic friend, J. Bartram of Philadelphia."

WILD FLOWERS AND NATURE.

MEMORIES OF THE VIOLETS.

Blue eyes by the meadow brook,
Half veiled in the long, soft grass,
How friendly they lean and look
At the ripples that laugh and pass.

And the skies of a long dead spring
Shine over me clear and high,
As the violets bend and swing
And the glad, swift waves run by.

With a smile that is lost in tears,
Silent I stand and look;
Oh, dream of dear, ended years—
Blue eyes by the meadow brook!

POETRY OF THE VIOLET.—Although poets have sung of the violet for many centuries, it is still capable of furnishing original thought, as the above pretty lines contributed by Madeline S. Bridge to *Judge* show.

CRINKLE ROOT.—A correspondent, referring to the evident value of the roots of this plant as an edible, remarks, "that it is strange that it has never been introduced into gardens as a vegetable." We think the hint a very good one; the radish, turnip, horse-radish, seakale, and numberless other plants, allied to this one, have been introduced into gardens, and so improved that they are now necessities, and yet in their wild state were not as valuable as this particular plant seems to be. They are all of the same family of plants with this, and there really seems to be no reason why, if an attempt were made to introduce and improve this root, it might not be as eagerly called for in gardens as any of its botanical associates.

DOG TOOTH VIOLET.—A correspondent calls attention to the fact that the roots of the *Erythronium* are always found deep in the ground. As we understand it, a sort of stolon is sent out from the bulb of last year, which is sent down deep in the ground when the root happens to find itself near the surface, but does not do so when it is already as deep as the plant itself seems to think it ought to go. Just why plants have these powers of discrimination has never been clearly ascertained.

DESTRUCTION OF TIMBER.—While there must certainly be a great diminution in the amount of available timber, considering how much must enter annually into economic uses, lumbermen themselves do not seem to fear any immediate danger of the shortening of the supply. In Maine especially, which has been the great source of timber supply for many years, there are still immense forests, and last year five hundred million feet of logs alone were sent to market from that State. It is sometimes forgotten, that while the large trees are being cut away small ones are growing up to take their places. Maine especially will probably for ages be yet a timber furnishing State. It is so well adapted for timber raising, that when the time comes to plant more profitably, Maine will probably be in the advance in forest planting.

DESTRUCTION OF WILD FLOWERS.—So great has been the demand for rare native plants in the old world that many are running danger of being entirely destroyed. It is said the same thing is occurring in regard to some of the rare species of orchids; the tropics have been scoured for them, and comparatively few are left. Mr. Charles H. Shinn writes to the "Garden and Forest," that similar destruction of wild flowers is going on in California. Some rare plants especially seem likely to disappear under the collector's hands. It is not always the florist who is to be blamed for this destruction. Mr. Shinn states, that even some botanists are no more considerate than the florist would be.

PINK INDIAN PIPE.—We happened to express our doubts about a correspondent having found the true Indian Pipe, *Monotropa uniflora*, with pink flowers. We have a large number of letters from friends, covering a wide territory, from Virginia to South Carolina, and especially from the vicinity of Philadelphia, all claiming that they have occasionally found this species with pink flowers.

AMMOPHILA ARUNDINACEA, HOST, (Sea-Sand-Reed.)—Mr. Frank N. Tillinghast, Greenport, Long Island, writes :—"A few years ago, in reading an Eastern paper, my attention was attracted to the following article:

NAHANT BEACH.

"There is one feature which the visitor to Nahant will notice with pleasure, as rather unusual,—the green grass which covers every foot of the beach between Nahant and Lynn, which is not covered in by the tides. This is a very beautiful sight. To the old resident who has been away for several years it is a wonder, for time was when this entire surface, now covered by the pleasantest light green, was the most dreary, desert-like waste of sand and shingle. The high tides swept it, and the waters of the harbor of Lynn mingled with those of ocean from Nahant and Swampscott side. The name of the bard, Alonzo Lewis, is to be held in grateful memory for his life-long interest in the care of this portion of Nahant. But in spite of everything that he did, the all-powerful seas continued to sweep this long stretch of the most delightful beach in this country.

Lewis placed stakes and rows of cedar trees, in order to allow the sands and shingle to accumulate in a ridge, which should perhaps eventually be sufficiently high to stop the incoming debris, and thereby create a permanent bar. All failed, until some fortunate thought caused the utilizing of a kind of grass which is native to the seashore. This was set out in bunches, at certain intervals. In a few seasons this grass has become what we see it—a spread of beautiful light green, with not a weed to break the even shade. It is equal in beauty to the prettiest well-kept lawn. What has it not done, too, in a more important way! It has effectively stopped all movement of the shingle, and the occasional overflow of tide is not sufficient to disturb materially the integrity of the whole. The hard, well-made road is left unharmed, and now, with the long reach of green on either side, the drive over Nahant beach is one of exceptional interest.

The plan of planting grass of the character which grows on the seashore is not new, but was introduced rather tardily at Nahant Beach. The result, however, is almost unique here—the extraordinary outspreading is certainly something worth seeing. This delightful green mass seems like a brilliant setting of beryl between the two azure surfaces of ocean."

I was curious to know the name of this grass which was "native to the seashore" and which had converted "the most dreary desert-like waste of sand and shingle" into "a spread of beautiful light green, equal in beauty to the prettiest well-kept lawn," so I wrote (enclosing the clipping) to a botanist of the vicinity, who replied:—"*Dear Sir:* The grass is the *Ammophila arundinacea*, *Host.*, as named by Vasey after Bentham—the old name *Calamagrostis arenaria*, *Roth*, is, however, too familar to be lost. It is very common here * * * The slip enclosed is romantic. The State has spent many a thousand planting this grass on Cape Cod, and it is not thick ever, although it does well there and at Plum Id. sands to keep the encroachments in check. What is said of the lawn-like green with no weed, etc., is unadulterated bosh! It is a tall, coarse, thin grass. Sincerely, J. R."

I felt disappointed. The plain facts had spoiled a pretty story.

[The conductor has seen on the sandy shores of the Pacific coasts, as well as on the shores of Western Europe, much success with this grass and its immediate allies in collecting drift sand, and thus prevent the encroachments of the ocean.]

MAGNOLIA FRAZERI.—This is probably the most beautiful of all the magnolias, and yet comparatively scarce in cultivation, owing, it is said, to its not being found very often in a wild condition where collectors can get at it. A correspondent, at Lynn, N. C., tells us that it is by no means uncommon in the woods there, although the odor is considered by most people unpleasant. As we grow it in northern States, this odor is rather pleasant, having somewhat of a lemon scent.

SHERMAN'S WEED.—A correspondent from Dalton, Ga., states that there is a very beautiful variety of wild aster now common in that country, which was unknown a number of years ago, and is believed to have been introduced by the army which went with Sherman across the continent during the rebellion, and, in consequence, it goes by the name of Sherman's weed.

ARBOR VITÆ.—A recent writer states that there is no reason known for this tree being called by that name. In the Academy of Natural Science Proceedings, a few years ago, it was stated that the name was given by a king of France to some plants sent to England by him,—the plants having been raised from seed brought to France on the return of Jacques Cartier from the St. Lawrence, who had been with his band frozen in all winter and cured of the scurvy by an infusion from this tree,—the knowledge of which was confided to them by friendly Indians.

AMERICAN AND JAPAN FLOWERS.—One of the most remarkable discoveries in geographical botany is the finding of a large number of species of plants identical in China and Japan and the Eastern part of the American continent. The list already large is being continually added to. The *Garden and Forest* notes a new item to the list in the Ram's Horn Cypripedium—*Cypripedium arietinum*,—and more recently our *C. spectabile* on the frontier near Thibet. China has not so many of these identical species as Japan has.

VARIATION OF LEAVES.—Mr. E. W. Wheeler, of Lynn, N. C., calls attention to the power which nutrition has in causing a change in the forms of leaves. He notices that a plant of the sweet shrub, *Calycanthus floridus*, which had been cut down, and was followed by an immensely strong growth of shoots, had leaves ten inches long and lanceolate, wholly different from those which are normally produced. This is a common experience in other cases, and well illustrates the point made by Mr. Wheeler.

TRIANGULAR-LEAVED TULIP TREE.— Mrs. Elise Willis, of Charleston, tells us that on the margin of the spring brook on an old plantation near Dalton, Ga., she gathered some leaves of the Tulip tree last autumn, of just the same character as that which we figured recently.

SARRACENIA PURPUREA.—Mr. E. V. Campbell, of St. Cloud, Minn., referring to the statement of the MONTHLY, that this plant has not been found beyond the Mississippi, states that he gathered some eight miles west of the river, and has no doubt it can be found farther beyond.

STEM BORERS.—Since calling attention recently to the great loss of the potato crop by reason of the stem-borer, letters of correspondents show how little is really known by cultivators of the ravages of this class of insects on the crops of the farmer and gardener. Calling the attention of a farmer of more than average attainments to a crop of corn sadly suffering from the borer, he "guessed it needed more manure." We had to cut through a stalk to show him that it was from the borer's attacks that it had the starved look. To aid in the dissemination of this knowledge, we have

CORN BORER.

Work of larger corn stalk-borer; *a*, general appearance of stalk infested by first brood; *b*, same cut open to show pupa and larval burrow (original).

transferred the annexed engraving from the pages of "Insect Life" by permission of the Secretary of Agriculture, of a specimen of the work of these corn stem borers. Currants, raspberries, and many kinds of vegetables suffer,—and when one sees a plant or branch looking sickly it should be examined. The remedy is to destroy the stalks before the larvæ escape.

THE CRINKLE ROOT.—Rev. E. J. Hill writes :—I had overlooked your inquiry in the October number about the Crinkle Root, and was only reminded of it by the answers, but a few items regarding it may still be of interest. Being a native of the region from which the inquiry came, I can vouch for the reason why as children we called the plant, *Dentaria diphylla*, by the above name. We always associated it with the appearance of the root, which was *crinkled*, or wrinkled, as you intimate. The word was a common one at the time, and doubtless remains so among the rural people at least, and was more particularly applied to anything long and slender with short, sharp bends or wrinkles. Thus a hair might be described as crinkled, but not wrinkled, or a thread unraveled from a piece of knitting described in the same way. The word wrinkled was more commonly reserved for a larger surface, like a handkerchief or a garment. This use of crinkle, it will be perceived, corresponds closely with its primary meaning, as given in dictionaries. The roots of the plant were eagerly sought for in the spring and early summer by children, and eaten, their mild, pleasant pungency making them very palatable. They were easy of access, the long root-stock generally having for a good part of its length only a slight covering of damp leaves or leaf-mould in the wettish woods where it grew, sometimes with the end near the stem exposed and with a green rind, which made it strong and less acceptable. It was never called Pepper-root by us, that name being reserved for another species, *Dentaria laciniata*, growing in the same localities. This was invariably called Pepper-root, from its very strong taste, and was usually passed by as too pungent for the child-palate, though commended for trial to any innocent party taking the first lessons in the mysteries of the woods. Its envious string of pretty, brownish tubers were well known to us long before the lessons in Botany came up in the order of school life. It was an unsolved riddle that the uncouth, sprawling Crinkle-root—for it often branched—should have so fine a flavor, and the handsome, attractive roots of its companion be so strong, though the wisdom of Æsop, later on, shed light upon the subject.

How extensively used the name Crinkle-root may be, I do not know. It is given in Gray's Field, Forest and Garden Botany, and there is added, evidently in explanation of the two other common names he gives—"Toothwort" and Pepper-root—"So called from the fleshy, long and toothed root-stocks, which are eaten and taste like Water-Cress." I find it mentioned in two catalogues of plants at hand which give common names, that of Michigan, by Wheeler and Smith, and that of Canada, by Macoun. It is given as *Krinkle-root* in the latter. In the Botany of Eaton and Wright, (1840) another common name is found, *Trickle*, which some one else may be able to explain. Perhaps *root* should follow, but it is not printed so as to indicate it. Is it a misprint?

I may add that the Crinkle-root has had, and may still have, other uses than those administering to the pleasures of children, having entered into the domestic economy of the Indians, and perhaps of the French of Canada. In his "Flore Canadienne," the Abbe Provancher says: "Its dried and pulverized roots are used in the manner of mustard." The elder Michaux, in whose Flora the specific name is first given, mentions the same use. Having found it in the forests of Tennessee and the high mountains of the Carolinas, he adds in an observation: "The roots are dried by the natives as seasoning for food in the place of mustard (*Sinapis*)."

POISON VINES.—Some careful experiments have been made by eminent pathologists on poison by the sumac, the result indicating an almost perfect identity in the result with the disease known as erysipelas; and it is suggested, therefore, that the same remedy may be used for Rhus poison as for the trouble in erysipelas. A lather of common potash soap, made strong, and applied with a shaving brush on the affected parts, is a well known and effectual remedy. Those liable to be poisoned by this plant, will do well to remember this.

THE NEW YORK BOTANIC GARDEN.—The stock for this project seems to be rapidly taken,—and there is now little doubt of final success. When established, the famous Torrey Herbarium, now in Columbia College, will go there. It is believed that the result will be the founding of an institution on this continent that may eventually be as famous as Kew.

GENERAL GARDENING.

A THOUGHT IN A ROSE GARDEN.

"You love the Roses—so do I. I wish
The sky would rain down Roses, as the rain,
From off the shaken bush. Why will it not?
Then all the valley would be pink and white
And soft to tread on. They would fall as light
As feathers, smelling sweet; and it would be
Like sleeping and yet waking, all at once!"

GEORGE ELIOT.

MAGNOLIA GRANDIFLORA.—Gen. Washington, besides being famous as a warrior and founder of a great nation, was also extremely fond of rural life, and numbers of trees on the estate at Mt. Vernon are pointed out as having been planted by his own hand. The last tree that he is known to have planted is a *Magnolia grandiflora*, which is now of considerable height, and is an object of great veneration to every visitor. It is a matter of surprise that, though every one regards pleasurably those who plant trees for them, so few undertake to plant trees themselves. There is no pleasanter memorial of a visit of a friend than to have him plant a tree while he is visiting; and it is pleasant to know that this habit is growing more and more among our people. It is said that Mr. George W. Childs, the well known proprietor of the *Public Ledger* and popular American, seldom allows a visitor to leave his beautiful grounds without inviting him to plant a memorial tree.

CLASSIFYING GARDEN PLANTS.—A correspondent from LaCamas, Clark Co., State of Washington, writes: "Your Monthly is just the kind of periodical that I have wanted to see established for a long while. I hope you will be able to continue as you have begun. I think it would be of general interest to publish fairly full lists of plants which thrive under similar conditions in the garden. For instance, specifying those which certainly thrive best in sunny situations, and those which certainly thrive best in shade. Many of these might be marked by symbols descriptive of their common requirements."

THE DAWSON ROSE.—We have asked Mr. W. C. Strong to give our readers something of the history of this new rose, and he kindly responds with the following:—

"This is a true Hybrid between distinct species, the parent plants being a perfectly hardy form of the Japanese multiflora, fertilized by the well known General Jacqueminot. It was obtained by Mr. Jackson Dawson, the skillful gardener of the Arnold Arboretum. It distinctly shows the characteristics of both parents and introduces a new race of hardy climbers of great promise. Retaining the strong, vigorous growth and the wonderful profusion of bloom of the multiflora, its form, size, color and fragrance of flower have been largely modified by the male parent. The flowers are bright pink, or rose-colored, semi-double, of great beauty and exceeding fragrance. It has been forced in a pot, by Mr. Dawson, for the past two winters, and has attracted marked notice at the Massachusetts Horticultural Exhibitions in February, receiving a first class certificate of merit. The plant last February was in a ten-inch pot and carried nearly seven hundred buds and blooms. These qualities of fragrance, profusion of bloom and attractive color make it a superior plant for forcing, for decorative purposes. But its chief value will undoubtedly be in open culture, either as a pillar rose, or for large bush form. For this use it is regarded by all who have seen it as a most interesting and decided acquisition."

VENUS' FLY TRAP.—A correspondent from North Carolina, wonders how the plant, which we recently figured, could be grown, as it has refused to grow under good cultivation by so many who have tried it in that part of the world. The only secret is to grow them under a bell glass, or in a glass case; it seems to require a great deal of atmospheric moisture. In this way there seems to be no difficulty in growing it. Droseras, and similar plants, are cultivated with some ease in the same way.

THE VICTORIA REGIA.—The beautiful queen lily of the Amazon is now tolerably familiar to many flower lovers in America. In the old world, however, it is still a rare sight. It was flowered for the first time in Russia last year, in an expensive tank prepared for it in a hot-house in the Botanic Garden at St. Petersburg.

SPIRÆA BUMALDA.—This is one of the most valuable additions for the shrubbery border that we have had from Japan. The whole plant is not much over a foot high, but is covered with a carpet-like surface of pink flowers all summer and fall. For border edging it will be found invaluable.

SPIRÆA BUMALDA.
FLOWERS BRIGHT PINK.

KENILWORTH IVY.—This plant is very well known as a basket plant for house decoration. Very few understand that it is perfectly hardy in our climate, and that it will serve to ornament old walls just as well as it ornaments the walls of the celebrated Kenilworth Abbey, from which it takes its name. We have recently seen some on an old wall along a roadside, which has evidently been on the wall for a number of years. It was quite as beautiful as anything seen in the old world.

SMALL PARKS IN PHILADELPHIA.—For a century or more Philadelphia has been utterly oblivious to the establishment of small parks or open spaces through its vast territory. Having acquired Fairmount of about 2000 acres, it seemed to rest quietly on its oars. During the last three years, however, under the lead of Councilman Meehan, the following have already either been placed on the plan of the city as parks, or been actually taken for public uses: Wharton, Bartram, Girard, Waterview, Juniata, Northwood, Vernon, McPherson, Stenton, Weccacoe and Fox. A large number of others are also being considered. The area of these named make about 150 acres.

PEELING THE BARK FROM TREES.—Every one knows that if we take off the bark completely from around the trunk of a tree it will die. Strange to say, this is only true of about ten months in the year, for if the bark is peeled a week or so before midsummer the tree will immediately replace the old bark by a layer of new. There is no doubt whatever about this fact, although to this day a large number of men, eminent in botanical science, will not believe it. The conductor of this magazine has indeed known of trees in such a hide bound condition as to be positively unhealthy, to be completely restored by stripping off the whole of the bark the first or second week in June. Nature intended that the bark of trees should be removed when it is no longer of any use, and has provided each tree with cork cells, the development of which is the agent by which the old bark of trees is thrown off. When these cork cells are undeveloped, or something occurs to prevent their proper action, the tree becomes diseased, and it is just in these cases when the help of man comes in to aid the tree to throw off that bark which nature itself desired to throw off, but was unable to accomplish.

PLANTING FOR POSTERITY.—J. M. says: We know of a case where objections were made to planting some English Walnut trees, because it was thought the planter would not live to gather the nuts. Sitting the same day under some large apple trees, which other hands had planted, the valuable lesson was learned, that we have to plant for the future, as well as the past has planted for us. The walnut trees were therefore planted,—and although this was but ten years ago, good crops are now being gathered by that party, from the trees which she planted.

IMPROVEMENT OF THE DODECATHEON.—This beautiful plant, which is found in various forms over many portions of our continent west of the Allegheny river, has been taken in hand for improvement by English florists, and a number of beautiful varieties have been announced. It is properly known as American Cowslip, though much nearer a Cyclamen in general appearance than the other members of the Primrose family to which this, the Cowslip and the Cyclamen all belong.

PRUNING.—A paper, which, to say the least, attracted as much attention as any paper offered at the recent meeting of the American Pomological Society in Washington, was by Mr. Dudley W. Adams of Florida, on the evil effects of pruning. Mr. Adams clearly showed that, as a general principle, pruning is an injury to the vital powers of trees, and that many of the diseases from which fruit trees and other trees suffer, come from this weakened vitality, brought about by pruning. We do not understand Mr. Adams as opposing pruning in every case; he distinctly stated that there were other advantages to be obtained sometimes, which made it desirable to sacrifice the general principle. For instance, we may well grant that pruning is an injury to the vital power of trees, and yet when we want to make hedges of them, as in the case of the Osage Orange and Honey Locust, we have to resort to pruning notwithstanding. With this clear understanding of Mr. Adams' views, it is an able paper, and received many commendations from those who listened to it.

STREET TREES.—The *Prairie Farmer* says that the most popular street tree in Chicago is the American Elm, but a large proportion of Cottonwoods are also used. The American Linden is employed to some extent, and occasionally some of the Ashes. The soft maple is occasionally used, but the Norway Maple is very rare. Catalpa is used considerably, and in some cases the Ailanthus. Strange to say most of the street trees are not nursery grown, but are rough trees taken from the woods; as a consequence there is very little uniformity of growth. The number of miles of streets is 2048, of which 1200 miles are lined with street trees. Notwithstanding the difficulty they seem to have in getting nursery trees, Chicago claims to have more miles of streets planted with shade trees than any other city in the Union.

OSAGE ORANGE TREES.—The Osage Orange is only known in a general way by its extensive use as a hedge plant. It deserves to be better known as an ornamental tree. Its mature size is about that of the apple tree, and when covered by its large golden orange-like fruit, few objects are prettier in a large garden. Even the shining foliage is very attractive.

THE PARIS PLANT GARDEN.—It will be a source of pain to all lovers of plants to learn that there is a possibility that the famous Jardin des Plantes in Paris may cease to exist. It was organized during the French Revolution, and the revolutionists suggested calling it a Zoological Garden. They had, however, no living animals in the Garden till 1789, when Buffon, the great naturalist, and Bernard in de St. Pierre obtained permission from the Convention to transfer the royal menagerie of Versailles to this Garden. There is some talk of a French Association being formed for the purpose of saving this historic place, and to still further continue its usefulness to science, but at the present time its future existence is among the uncertainties.

TURNIP ROOTED CELERY.—SEE PAGE 28.

TREES ON BOUNDARY LINES.—It has been decided that the fruit from branches overhanging a neighbor's property belong to that neighbor. This is on the common sense judgment that as the roots of a tree feed on a neighbor's property, the neighbor ought to have the fruit which his own soil nourishes. In Connecticut trouble has originated even from this decision. One fruit tree on a boundary line was overrun with caterpillars, and it became a question which a court of law had to settle, who owned the caterpillars. One man stating that the other fellow should clear the tree; as both were obstinate, the law had to decide the ownership of the caterpillars as well as of the overhanging fruit.

ABIES PINSAPO.—This beautiful fir is quite rare in American gardens on account of its being somewhat tender when exposed to cold winds, when growing north of the Potomac; and south of the Potomac it is said not to stand well the warm summers. Visitors to Mt. Vernon, the home of Washington, may, however, see a large number of fine specimens on the grounds; we should suppose about twenty-five years old, judging by the fact that some of them are commencing to produce cones. They have a bluish green appearance on these grounds, very different to the pure green tint which they usually exhibit. As seen here, they form some of the most beautiful objects that any one can see in the whole fir family. Visitors to Mt. Vernon should not fail to examine closely these splendid specimens.

TURNIP ROOTED CELERY.—SEE PAGE 28.

ARRANGEMENT OF LAWNS.—In the spring of the year, wherever frost has existed, inequalities in the grass will occasionally appear, and all good managers of lawns, therefore, like to have a light roller go over it as soon as the danger of frost is over. If there are bare patches not covered by grass, the soil may be slightly raked, and new grass seed sprinkled before rolling. In like manner, in places where weeds have been taken out, or from any other cause, considerable inequalities of the surface may exist, earth may be sprinkled in before rolling, and the grass seed sown. With this little care lawns are considerably improved in beauty. If the grass seems to be impoverished a dressing of any kind of fertilizer is of great advantage. This may also be applied before rolling.

HYBRIDIZING ROSES.—It is only of recent years that efforts have been made to hybridize for distinct classes of roses. Madame George Bruant, which is a hybrid of Kamtchatka rose, and the Tea rose known as Sombreuil, is now well known and appreciated for its many useful qualities. Recently, in the old world the Austrian brier, which has brilliant golden flowers, has been made to cross with the sweet brier, and it is said that the varieties raised between this cross are singularly beautiful. The sweet brier thrives remarkably well in the Atlantic States, in fact, in most of the Northern States east and west, and it is a matter of surprise that it is not more generally met with. There are few things more grateful than the odor of the sweet brier, especially from the leaves in the early morning, while the beautiful rosy flowers, which follow the budding leaves, give it a great attraction; in addition to this the large red fruit which follow the flowers, and continue far into the winter, prolong the season of beauty to many months.

LOMBARDY POPLAR.—A correspondent calls our attention to the fact that Dr. Darlington in his book, "Weeds and Useful Plants," makes the prevailing Lombardy poplar of the United States a staminate and not a pistillate tree. But Darlington says he only heard so. We have no means just now of verifying this, and it is one of those cases where we must be content with not being, as the classical writer of antiquity says, "wiser than is written." It is, at any rate, of one form, and does not seed.

THE SUMMER HOUSE, A TYPE OF GENTILITY.—"I was a carrier's boy at startin," said Sam Weller to Mr. Pickwick, "then a wagginer's, then a helper, then a boots. Now I'm a gen'l'm'n's servant. I shall be a gen'l'm'n myself one of these days, perhaps, with a pipe in my mouth, and a summer house in the back garden."

LEAVES ON LAWNS.—A Holmesburg, Pa., correspondent asks if it is best to let leaves lie on lawns all winter. The chief objection is from the untidy look. The rotting leaves is a fertilizer for the trees and grass. These want food as well as corn or potatoes. If the leaves are removed, some fertilizer should be applied in spring.

HOT WATER AS A MEANS OF DESTROYING INSECTS.—The writer of this paragraph was probably the first to call attention to the great value of hot water in the destruction of insects. The pot plant, infested by any kind of insect, inverted and dipped in a temperature of 130° for a few seconds, will invariably have its insect pests destroyed. Attempts were made last year to carry this idea into the destruction of the Rose bush, one of the worst garden pests we have, but it was found that the water cooled so rapidly by the time, in the open air, it reached the plant from the syringe that its application as a destructive agent in this case was impracticable. The best method of destroying this insect is still an open question. So far the only method that has been at all successful is shaking them off by hand into vessels of water, and then destroying them.

COMMON NAMES OF THE LILAC.—Even in so small a place as England, of which it is said that a man may land on one side in the morning, and fall off the cliffs on the other side before night, the lilac is known by different names, traveling every few score miles. In one place it is called the May plant, in another it is the Princess feather flower, in another it is called Duck's bills, while Laylock is a common variation in those localities where it should be known as lilac. Possibly if one were to search in other countries than England, we should find it with a score or so of other names. The great difficulty with English names for flowers is, not that their English names are improper, but there is no authority as to which one should be generally adopted. No system for the general adoption of any one particular name has ever been suggested.

ROOTS IN DRAINS.—A Charleston correspondent tells us that, in that city, a large drain, two feet in circumference, was found to be thoroughly choked for a distance of thirty-five feet with the roots of an Elm, notwithstanding that the drain had been flooded twice daily by the influx of salt tide water.

KOLREUTERIA PANICULATA. — Mr. James Stewart, of Memphis, Tenn., writes enthusiastically of the manner in which this beautiful small tree behaves in that section. Its golden flowers in July are described as gorgeous.

FRUITS AND VEGETABLES.

PEACH YELLOWS.—Californians are just now exercised for fear the peach yellows should be introduced in that State, and are establishing an embargo, which is to keep out peach trees from other sections. They are wise in doing all possible to keep their trees healthy ; but in regard to the yellows, it is to our mind well nigh impossible that the yellows can ever exist in California. The actual experiments of the writer of this paragraph, made years ago, have proved that the peach yellows is caused by the action of a species of mushroom, *Agaricus melleus*, and there is every reason to believe that this species of mushroom does not spread in California. The laws which regulate the development of mushrooms require very nice conditions. This *Agaricus* will only live in continuously moist and cool climates. Even in the eastern States, where the yellows has probably existed in some of the more northern ones for a century, and where introductions have been from north to south continually, the yellows does not exist very far below the line of the Potomac, because the conditions are unfavorable to the growth of this particular species of mushroom. In like manner, when peach trees are grown under glass, as they have often been as a matter of amateur interest, and in some cases to profit, no signs of the peach yellows have been observed, chiefly because that mushroom will not develop under those circumstances. We would just as soon expect to hear of the peach yellows in California as we would to hear of an acre of pineapples being produced in Maine.

TOMATOES UNDER GLASS.—In many cases it is impossible to raise vegetables under glass that will profitably compete with those raised in the open air in the South, since methods of transportation have become so numerous, and intercourse so prompt. The tomato, however, seems to be an exception. Those who are successful in this kind of forcing, can raise specimens far superior to anything that can be produced in the open air, and it is reported that the sales can be made at very profitable prices. Any one who can have a very light greenhouse, with temperature of not less than 60° at night, can have bushels of tomatoes which can be all readily sold.

TURNIP ROOTED CELERY OR CELERIAC.—Recently we expressed some surprise that this valuable vegetable was not more popular in our country than it seems to be —several seedsmen telling us that the demand for it is extremely small. This is probably from the fact that most of our vegetable tastes seem to be derived rather from England than from the continent of Europe, and the vegetable is not freely used in England any more than with us. On the continent, however, and especially in France, its use is much more frequent, and many ingenious and toothsome dishes are made up of it; as a consequence there is much inducement to improvers of vegetables to introduce new varieties. The house of Vilmorin Andrieux & Co. have especially turned their attention to it, and we give illustrations, here-

TURNIP ROOTED CELERY.

with, of three forms, which they have introduced. We may repeat what was said in a former note, that the vegetable is simply a form of celery, in which the roots rather than the leaves have received the improvers' attention. In this case, they are nearly as large as turnips, and are soft and succulent, not, perhaps, quite so much as a turnip, but considerably more so than the root of the ordinary celery. We are quite sure that when once freely introduced, it would be one of the most popular of garden vegetables. Foreigners are sometimes charged with being slow in adopting a good thing from our country, and the long time it has taken the English people to get familiar with the goodness of our tomato, has been stated as a case in point. Though we have used it almost as an article of daily food for half a century, it is only within these last two or three years that it has come to be popular in the mother country. When we think of the slow progress of celeriac in our country, as compared with its extensive use in France, we are inclined to think that we may be charged with the same sort of slowness sometimes, as we charge our European brethren with.

GOOSEBERRY CULTURE.—The large English gooseberry, of which every reader of English periodicals desires to see reproduced in his garden, is very difficult to grow, on account of a species of mildew, which thrives in the warmer parts of our continent. It has been noted, however, that this chiefly comes from the warmth of the soil, and not from the heat of the atmosphere. When gooseberries of this character are planted in parts of the garden where the soil is always cool, they thrive nearly as well as in the Old World. Some of these English varieties are less liable to mildew than others. Those who wish to try these should endeavor to get the nurseryman to select the hardier ones for them. Where there is not a particularly shady piece of ground, the surface of the ground underneath the gooseberry tree may be covered with old corn-stalks, or litter of any kind, so as to keep the rays of the sun from warming the ground. Under these circumstances the English gooseberry often escapes the disease which troubles it. Even the placing of stones underneath the bushes has been found very effective in some instances. The pruning of the gooseberry is a matter of some consequence. The thin, weak shoots should be trimmed out, leaving only the stronger ones. This is about all the art there is in it, but yet a point of practice of much consequence where first class fruit is desired.

GOOSEBERRY MILDEW.—It is stated by the bulletin of the New York Agricultural Experimental Station, that if a solution of liver of sulphur, dissolved in a gallon of hot water, be sprayed over a bush at intervals of twenty days, the gooseberry mildew may be destroyed. Others prevent the mildew by placing large and heavy mulches under the gooseberry bushes. The high temperature of the earth seems to injure the resisting power of the plant. Where the soil is cool the plants are usually free from mildew.

PLANTING FRUIT TREES.—A continual caution is kept before planters to look out particularly for an abundance of fibrous roots. It should not be forgotten that fibers are only annual; they serve as feeders for the year, and at the end of the year die away just as leaves do. Among these fibers a very small proportion become permanent roots. It should be a much greater care to have plants with an abundance of two or three old roots, which are young, active and vigorous, than mere fibers. If this is understood, all right; but very often the very worst thing a tree can have is too many fibers. When over abundant they prevent the earth from getting near the active roots, and as they die away before the season is over, they make a vacuum which is of no value whatever to the plant. The earth should be packed in tight around the energetic roots, and not merely around the small fibers. In regard to the evergreen trees, it is a common thing to have transplanted Hemlock Spruces, Norway Spruces and other similar plants with a very large mass of fibers, die. The reason is the one we have already given, that so dense a mass prevents the earth from getting around the real roots, that should be properly so called. It may be again impressed in a brief paragraph that what is wanted is an abundance of two or three year old roots to a tree, and not mere annual fibers.

GRASSHOPPER TRAPS.—It is singular that those who, in the West, suffer so much from grasshoppers, do not give more attention to a method of capture which has been in use for many ages in the grasshopper-stricken regions of the Old World. As it is well known, the grasshoppers can easily be driven like sheep in front of anyone driving them, and by extending long lines of rather closely woven fishing net, the grasshoppers may be driven into those nets, and easily captured.

THE LAWRENCE PEAR.—This has long been conceded to be one of the best pears for preservation for winter along the Atlantic portion of our continent. A very close competitor, however, is the Buerre d'Angou. It is said that sometimes one of these will do better in one section than the other; at any rate no one will go wrong in planting either.

GOOD PLANTING.—It is not unusual to hear people say that they cannot understand why trees die under transplanting, considering that they give the planting the very best of care. What is considered the best of care is often very bad care. It is amazing to see the careful planter without experience, occasionally on his knees pressing the earth in around the roots with his fingers, for fear of crushing the fibers. It is impossible to get the earth properly packed around roots in this way. In nurseries, where it is presumable planting is thoroughly understood, a man stands with a rammer while one is putting in the earth, and hammers the earth in as tightly as though he was hammering in a post. This packs the earth in more tightly than can be done by either feet or hands. Some are afraid of crushing the roots with this hammering process; but with the pressure all around, the force is directed towards the roots and not away from them. It is not necessary, however, to go into reasons, as the universal experience of the nursery is in favor of hammering in the earth as represented. This is the essence of good planting, and any other planting is decidedly bad. Trees properly planted need no staking. The fact that a tree needs staking is a proof that it was not properly planted.

GROWING FILBERTS.—Many inquiries come to us as to the feasibility of growing these nuts as an article of profit. Wherever plantations of several score of trees can be made they bear fruit very abundantly, but as single specimens on lawns or in gardens the fruit is apt to be very scarce, on account of the difference in time before the maturity of the catkins and the little purple flowers, which subsequently bear the nuts. A few warm days in winter will mature the catkins, and in this way the purple fertile flowers are deprived of pollen. If only one or two bushes are to be planted they should be grown on some northern slope, where the warm suns in winter will not bring on the catkins too early.

LIMA BEANS.—California is going into the cultivation of Lima Beans with a vengeance, one grower alone having 2200 acres last year. They allow them, however, to trail on the ground, and thus dispense with staking.

BIOGRAPHY AND LITERATURE.

LABOR IS SWEET.

O poor man's son! scorn not thy state,—
There is worse weariness than thine,
In merely being rich and great,—
Toil only gives the soul to shine,
And makes rest fragrant and benign,
A heritage, it seems to me,
Worth being poor to hold in fee.

LOWELL.

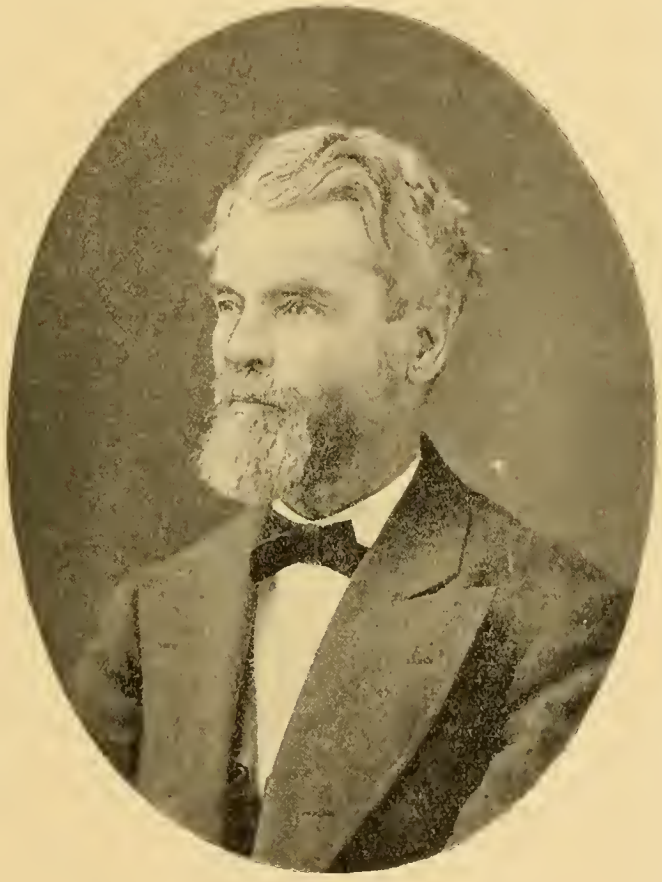
BARON FERDINAND MULLER:—SELECT PLANTS FOR CULTIVATION IN AUSTRALIA. It is a matter of surprise to those who know of the good work of this famous botanist, that he manages to accomplish so much. Many can do a great deal of work but not do it well, but whatever this gentleman touches seems to be as perfect as such work could well be. It must be very gratifying for him to know that his labors are so highly appreciated everywhere. Some years ago he published a list of plants belonging to other parts of the world, that might have some practical value for cultivation in Australia. This is the most complete work of the kind ever issued and those who want to know anything about American economic plants refer to it as if it were an universal encyclopedia. The work has recently gone through the eighth edition. It is a high compliment to the Baron's labors that his many friends all over the world are as gratified as he must be at this evidence of popular appreciation.

M. ALPHAND.—Those who have visited Paris, and have been charmed with the gardening of the Parc Monceau and Chaumont Park, the Bois de Boulougne, and the beautiful gardens of the Champs-Elysee, will regret to learn of the death of M. Alphand, who was the eminent landscape gardener, who had the laying out and arranging of these beautiful places. His death occurred on the 29th of November. He was born at Grenoble in 1817, and had the patronage of the celebrated Baron Haussmann, whose name, in connection with the beautification of Paris, will always be gratefully remembered.

HENRY C. GIBSON.—Amateur horticulture has suffered a severe loss in one of its best patrons, Mr. Henry C. Gibson, of Philadelphia, proprietor of the Monongahela distilleries, of Pittsburgh, who died recently in his 61st year. He commenced his love of horticulture by forming a collection of cactuses. In his love for these he collected everything that could be obtained at any price in any part of the world. Unfortunately the general impression that these plants are easy of management, while they are just the reverse in an artificial state proved true here,—they became diseased and unsatisfactory, and after a few years he abandoned their cultivation, taking up with ferns, palms and similar plants adapted to conservatory culture in the heart of Philadelphia. To-day his conservatory is one of the most artistically arranged and beautiful, combining nature in the shape of flowers with art in its various forms, that is to be found in the city of Philadelphia. In near connection with the conservatory is a large gallery famous for its valuable pictures. A few years ago he built himself a beautiful country home, which he called Maybrook, near Wynnewood, the house and grounds being valued at $500,000. The grounds were laid out in the best styles of landscape gardening,—one of his desires being to form artificial forests on the ground; for this purpose he planted closely a large number of rare American trees. They are only just now beginning to develop so as to show the ultimate design of the owner. Aside from his interest in horticulture, he was a liberal patron of science, and was one of the prominent men connected with the great advance which the Academy of Natural Sciences has made during the past few years.

ASA GRAY.—It is said that one of the plants which early in life attracted the attention of this eminent botanist, and had no mean influence in fixing his attention to botany, was the Spring Beauty, *Claytonia Virginica*.

Dr. I. A. Lapham.—In our October number the opinion was expressed that the full value of Dr. Lapham's scientific work had never been fully realized. We regarded him as one of those whose scientific work in the generation passing away deserved fuller recognition. It so happens that since that time, Mr. A. J. Aikens of the *Evening Wisconsin*, Milwaukee, invited essays from the citizens of Wisconsin, on the life and services of whoever the author might regard as Wisconsin's most eminent son, and the decision by this popular vote has been largely in Dr. L's favor. The result has been a nicely gotten up pamphlet as a tribute to Dr. Lapham, with an excellent portrait of the famous botanist and naturalist, which Mr. Aikens has kindly permitted us to reproduce. Some inquiry has been made concerning the fate of the immense collections of natural history made by him, some supposing they were all destroyed by the fire in Science Hall, at Madison. Dr. Lapham's minerals, fossils, shells, meteorites, Indian antiquities and other articles—10,000 specimens in all were devoured by the flames; but fortunately the herbarium and library had not yet been placed there, and are still in the custody of the State. We learn that a Lapham Memorial Association is being founded in Wisconsin.



DR. LAPHAM.

Legend of the Buttercup.—Traditional associations with flowers often originate in legends and stories that have long floated over the great sea of history through ages long past. Here, for instance, is the story of *Ranunculus*, several thousands of years old, in which the ingratitude of the fair sex to a devoted lover forms a conspicuous part. *Ranunculus* was said to be a very comely young man, and possessed uncommon accomplishments, and especially such as should render him very attractive to young ladies. In music he took an especial delight, and when any company of nymphs were gathered together, the atmosphere resounded with the sweet melody of his songs. Charmed and delighted as they were, they did not, however, show their gratitude in any manner that would warrant him in expressing the love he felt for any one of them, and so the poor fellow died broken-hearted. Then the gods, in pity for the unfortunate youth, turned him into the pretty flower which bears his name. These old stories have their practical uses as well as a poetical attraction. They especially aid us in many cases to understand points which are unexplainable without them.

J. J. Thomas.—Lovers of horticulture everywhere will be gratified to know that, with the exception of somewhat impaired eyesight, this gentleman is still hale and hearty at his home at Union Springs, N. Y. Few men have had more influence on the progress of gardening in America than Mr. Thomas, and it is gratifying to know that he is still energetically active.

GENERAL NOTES.

English Botanical Names. — A correspondent says : "It seems a good point which one of your correspondents makes that when the botanist asserts that he cannot build up a scientific system of nomenclature by the use of English names alone, it is hardly the thing to tell him he is mistaken. It is for those who think it can be done, to make the trial. As for English names as they prevail to day, a New York friend handed me a bunch of 'Loosestrife' last summer, which I had known as *Lythrum salicaria*. I corrected him by saying Loosestrife was *Lysimachia*. On hunting up the case we found that both were right, and in addition *Ludwigia*, *Jussiæa* and *Nesæa*, all had 'loosestrifes' among them! To be sure there are synonyms among Latin names, but all agree on the prior name. There is no such rule here. As to some Latin names being 'hard,' so are many English names." [Surely this discussion may stop here.—Ed.]

The Beauty of Evergreen Trees.—A Chicago correspondent compliments this article, which was from the pen of one of the junior editors, on the large amount of practical matter condensed into a comparatively small space. We are especially pleased with this compliment, as it is our design, considering the limited number of our pages, to have as many thoughts as possible with the smallest expenditure of language to convey them. We really think that there is quite as much solid information given in our sixteen pages, as in double the number as usually offered.

Gardening in Dakota.—A correspondent from Watertown, S. Dakota, writes : "I am very much pleased with Meehan's Monthly, as we are just taking an interest in gardening out here. There is not, of course, much yet done in a highly artistic style, but the taste is here, and only needs such a magazine as yours to cultivate it."

Meehans' Monthly.—A New England correspondent pays the magazine the high compliment of saying that he subscribed doubtfully for six months, fearing it might be merely a vehicle to boom the business of the proprietors, and that he is so delighted that it is not, that he renews his subscription with great delight, as it is a magazine of which America may be proud.

We are glad this point is so well appreciated. The fact is, the proprietors expect to be out of pocket for several years. The work was only undertaken after regular publishers in Boston, New York, Philadelphia and Baltimore had declined. They "could not see any money in it." The senior editor could not bear the thought that so much valuable material as he had gathered together, should not be turned to public advantage. Instead of a mere business advertisement, our advertising pages are freely open to all who care to make use of them.

Our main object is to do honor to our native flowers, and to help gardening, and garden natural history along. On this platform we trust to a generous support.

The Monthly in the Old World.—One of our gratifications during the Christmas season, was to receive quite a number of subscriptions to our magazine from lovers of botany and gardening in the old world. France, Italy, Germany and England are well represented in this pleasant list.

American Gardening.—Our enterprising contemporary, the *American Garden*, having combined with *Popular Gardening*, has appropriately changed its name to *American Gardening*. Each magazine separately has done great service to horticulture, and we wish the new combination every success.

Our Next Plate.—We shall give fern-lovers a chance next month by an illustration of the rare and beautiful *Trichomanes radicans*,—the loveliest of all the filmy ferns.

TRICHOMANES RADICANS.

KILLARNEY FERN.

NATURAL ORDER, FILICES.

TRICHOMANES RADICANS, Swartz.—Fronds pellucid, with a loose roundish areolation, on a short broadly-winged stipe, lanceolate or ovate-lanceolate, bipinnatifid, pinnæ ovate or deltoid-ovate, obtuse, the upper side of the base parallel and appressed to the winged rachis, the lower side cuneate; divisions toothed or divided into linear lobes; involucres terminal on short lobes of the pinnæ, tubular-funnel-shaped, margined, at the mouth truncate and slightly two-lipped; receptacle exserted a little or very much. (Chapman's *Flora of the Southern United States.* See also Eaton's *Ferns of North America* and Williamson's *Ferns of Kentucky.*)

Goethe, the eminent German poet, in one of his verses as translated by Lord Gower, remarks about a flower he has in mind,

"Not on the mountain's shelving side,
Nor in the cultivated ground,
Nor in the garden's painted pride,
The flower I seek is found."

Of the plant we are now describing this may be as truly said, for in no place where vegetation usually exists must we go to seek it. Its home is at the mouths of caverns, or in the dark recesses of moist rocks, where few would think of going to look for living things, except such as belong to a very low organization and are somewhat indifferent to the light and air. Indeed, it is only through a difference of opinion among scientific men as to the real nature of *Trichomanes* that it is found at all among the "flowers," or plants which legitimately belong to a work limited to the "Flowers and Ferns of the United States." It is indeed scarcely a fern in the sense those are that are usually deemed such, but rather a connecting link between ferns and some of the lower orders. Presl, a distinguished authority on ferns, made a distinct natural order of them, under the style of *Hymenophyllaceæ*, though other botanists retain them in the order *Filices*, but make a separate division for them under the name of *Hymenophyllæ*. In this they place three genera, *Hymenophyllum*, *Loxsonia*, and our present genus, *Trichomanes*. The order, as distinguished from ferns in general, was made to depend chiefly on the form and attachment of the sporangia. Mr. John Smith, in his "*Historia Filicum*," thus describes these characters: "The distinct habit and peculiar structure of the sporangium led some pteridologists to characterize *Hymenophyllcæ* as a distinct natural order of ferns, which I do not deem it desirable to adopt. The peculiarity of the sporangia consists in being sessilely attached by its inner side to the columnar receptacle, the point of attachment being central, or more generally eccentric towards the lower limb, and the numerous sporangia being compactly seated round the receptacle, they consequently acquire a flattened form, each having an articulated ring passing around it, at a more or less oblique or at a right angle to the point of attachment, being thus analogous to the flattened sporangia of many *Cyatheæ*." It is well for those who do not like hard names for plants that Presl's views of classification in botany have not been adopted, for he would not only have divided the natural order, but our present genus *Trichomanes* into numerous other genera with such names as *Hymenoglossum*, *Sphærocyonium*, *Ptychophyllum*, *Myrmecostylum*, *Leptocyonium*, *Hemiphlebium*, *Abrodictyum*, *Meringium*, *Microgonium*, *Neurophyllum*, *Cephalomenes*, *Ragatellus*, *Lecanium*, *Cardiomanes*, all of which modern authors agree to give as synonyms to the old Linnæan genus of *Trichomanes*.

The peculiar structure of this class of ferns is somewhat noted in the description of the species as quoted from Dr. Chapman, and will be readily understood by a comparison with our drawing. In ordinary ferns there is a thin membrane covering the fruit dots, in their early stages, called the indusium. This membrane is sometimes termed the involucre, and this is peculiarly appropriate here, where it has been projected into a sort of cup, or, as the description says, "tubular-funnel-shaped" (Fig. 3). Then in other ferns the sporangia are attached to the veins, and here the vein,

equally with the involucre, is projected to some length beyond the end of the frond, and forms a slender column in the centre of the involucre. The sporangia are attached to this, and is therefore in the description called the "receptacle." In the more mature specimen (Fig. 3) the end of the receptacle is just seen in the middle of the mouth. In the younger ones (Fig. 2), they are a little longer, and this gives force to Chapman's point that the "receptacle is exserted a little or very much." It is on the differences which the involucre affords that, among others, systematists rely to distinguish species. It is likely when the range of individual variations are known, some kinds now thought to be distinct will be be united. There is indeed a tendency to great individual variation, and "numerous intermediate forms, with different appearances at different periods of growth," as Mr. Smith notes in the work already cited.

The species was first noted by Swartz in the West Indies, but strange to say, it was detected not many years ago near the Lakes of Killarney, in the south of Ireland, for which it is universally known in floricultural literature as the Killarney Fern. It has since been found in one or two other places near this original location, but nowhere else in the British Isles. Its presence there has been the occasion for much ingenious speculation as regards its ancient history, and the discussion shows how a knowledge of plants tends to advance information in many kindred branches of intelligence. For instance, Tacitus, a Roman historian who lived in the time of the Emperor Nero, and just subsequent to the commencement of the Christian era, noted that Ireland was then between Spain and England. There is nothing of Ireland left now between Spain and England, and if Ireland ever was connected with Spain, a portion must have sunk to the bottom of the ocean. Now this fern is found in the west of Spain, Madeira, the Azores, the north of Africa, the Sandwich Islands, as well as in the West Indies. It does not spread now in its Irish location, and it has probably been in the isolated spot where it is found for centuries. As it does not spread, it is an evidence that it is at the northern limit of an ancient circle. It must have spread by a land connection, and no doubt from its present Spanish location, and the little fact is a strong confirmation of Tacitus in his geographical view of the greater southern extension of Ireland in his time.

Professor Asa Gray remarks in his "School Botany" that "a broader and more compound form from Killarney, Ireland, is grown in Wardian cases," and Professor Eaton, in his "Ferns of North America," implies a doubt whether the Irish form referred to by Dr. Gray, and in the history already given, may not be distinct from ours. Assuming that it may be different he calls ours the "Alabama Bristle Fern," leaving "Killarney Fern" to the Old World form. It makes as much confusion to multiply "common" names as "proper" botanical ones, and as Mr. John Smith notices the species of the genus to be variable, it seems best to retain only the one name till the distinction be established. Of course "Killarney Fern" is not wholly appropriate to a fern having so wide a range as this, but then these names seldom are wholly satisfactory.

Like the plant in Ireland, this in our land has only been found in comparatively modern times, the first discovery being made by Judge Peters, in Winston county, Alabama, in July, 1852. It was afterwards found by Rev. Dr. Curtis in the Cumberland Mountains. Since then it has been found in numerous places in Kentucky, Alabama and Tennessee by Mr. Williamson, Miss Gandell, Miss Rule, Dr. Crozier and others. In Carter county, Ky., according to Mr. Williamson, it was first found in 1872 by Mr. D. H. Hill, of Cincinnati. In Barren county, Ky., Professor Hussey found it "in more than twenty localities, always on rocks or moist earth, far under over-hanging cliffs, at least where moisture never fails, and the direct rays of the sun do not reach during many minutes of the day. Usually the fronds are bedewed with moisture, trickling from the rocks on which they grow." It is a fern which thrives remarkably well under culture when near the spray from a parlor fountain, or in a damp and shady place.

EXPLANATION OF THE PLATE.—A specimen contributed by Mr. Ed. Gillett, of Southwick, Mass., obtained from the South. 2. Section of a frond with involucres enlarged. 3. Separate involucre with vein enlarged.

WILD FLOWERS AND NATURE.

A MORNING IN EARLY SPRING.

Down the frozen valley,
Down the mountain side,
Lo, the Morn is coming,
Like a timid bride;
High the hill-tops round her
Glow with sudden grace,
Blushing as with pleasure,
When they meet her face.

Swift the snowy meadow
Seems to bloom anew,—
Purple, gold and crimson;—
Flowers of light and dew!
See, from the thorn and willow
Wake the lyric throng,—
From each bough of diamonds
Scattering gems and song!

CHARLES SWAIN.

HOPS IN COLORADO.—A correspondent of the *Journal of Horticulture*, notes the fact that a hop-garden of fourteen acres is in successful operation near Denver, and concludes that there can be no doubt about the hop being suited to the climate of Colorado.

It does not seem to be known that the hop plant is indigenous to that portion of Colorado, and naturally ought to do well. Where the famous Manitou hotel stands, was 'Camp Meehan' in the itinerary of the earlier exploring days of Colorado, and specimens of the hop vine were among the trophies of that camp's collection.

The trouble with hop culture is the common green aphis. When they infect the flowers, as they often do, the hops are useless. It is this trouble, and not the climate, that may some day prove an enemy to hop culture in Colorado, and the grower should watch the earliest appearance of these insects and destroy them before they deposit many eggs.

NATIVE HABITS OF CHINESE PRIMROSE.—Dr. Henry, to whom flower lovers are indebted for much knowledge of Chinese botany, says that the wild Chinese Primrose grows on the ledges of rocky limestone cliffs, where there is little moisture, and that the flowers are produced in December and January in China.

RAIN-FALL.—Although not understood generally, a few men of science, who have examined the matter, very clearly understand that springs of water are very little benefited by the rain-fall within a few miles of them. These springs are usually supplied from hills or mountains, the water soaking through into the rocky strata, and flowing out frequently scores of miles away from the outlets of the springs. In order to test the matter, thoroughly, however, a society in England has recently published a paper giving the exact figures, and they find that very nearly all the water that falls into ordinary cultivated soil by the rains, goes up again in evaporation. The experiments were tried by examining the percolation through soil at the depth of 20 inches, at 40 inches, and again at 60 inches, and they found very little indeed of the rain-fall to reach the depth of 60 inches. During the years 1873 and 1874 for instance, when there was a rain-fall of some 22 inches, at 60 inches below there were but 4 inches which reached that depth. Just how the evaporation from the soil occurs is not yet quite known; vegetation itself transpires a great quantity. It is estimated that a grain crop takes out about 7 inches of the rain-fall. It seems to be, however, certain that in some way or other, so far as the experiments detailed in this paper go, that out of 20 inches of rainfall into the earth, about 19 go back again into the atmosphere in the form of evaporation. The water which furnishes springs comes chiefly from the melting snows in loose mountain tops, where the water has a fair chance of getting down into the rocky strata.

SUGAR FROM MUSHROOMS.—Mr. William Herbert, of Trexlertown, Pa., writes in reference to sugar from the mushroom *Lactarius piperatus* (not *Lactarias piferatus*, as the wicked types had it), that the species "is very abundant in our open oak woods during the months of August and September." "The specific name is derived from the peppery taste of the milky juice, which is quite abundant."

TRADESCANTIA PILOSA.—It is just about 100 (1788) years since Michaux found this pretty plant in damp grassy places in the "lower part of the Carolinas" and Georgia,—but it does not often appear in botanical collections. The writer of this never came across it in his wanderings. Our cut is made from a beautiful painting made for us by Miss Elizabeth Schofield, who describes it as forming an interesting feature of the meadow scenery near Aiken, South Carolina. The drawing is of full size, and if growing with the "blue eyed grass," *Sisyrinchium Bermudianum*, as no doubt it often does, the wildflower effect must be singularly pleasing.

TRADESCANTIA ROSEA.
Flowers Rose Color.

THE RED SNOWBERRY.—A southern correspondent kindly informs us that among the common names of this plant in that state, is "coral plant" and "necklace plant," as the sprays are very commonly used by children as substitutes for the real necklace.

A BUTTERNUT TREE THAT SHOULD BE FAMOUS. — The forest that grew on Little Round Top, the famous position of the battle of Gettysburg, has been all cut away, probably that spectators may have a clearer view of the whole twenty-five square miles occupied during the battle. General Warren's statue is placed on the spot supposed to be his chief observation point. The writer of this had the sad privilege of knowing that General Warren's chief position was on the top of a large butternut tree, which overlooked the other trees on the top of the hill. This was his observation point. Such a tree deserves to be as famous as the apple tree under which General Lee surrendered. Fortunately in cutting away the forest this butternut tree is just beyond the line which received the woodman's ax. It is, however, in a very dilapidated condition, visitors having been allowed to hack it to pieces to get out the bullets and pieces of shell. It seems to us that such a useful tree, having so much to do with the success of the armies on that great occasion, deserves to be protected and cared for as long as it is possible for nature to allow it to exist.

CANNA FLACCIDA.—The Indian shot, as the canna is called from its shot-like seeds, is well known from the place it holds in our summer gardening. Nearly a hundred species have been described, mostly from the tropical portions of our own continent, though a few are found in the East Indies, and at least one in China. Only one has reached the territory of the United States, namely, *Canna flaccida*, (see illustration p. 37) which is a striking feature in the wild flower scenery of the swamps of South Carolina and Florida. Those who are fond of pressing for English names may note that in spite of the very appropriate name, the common people have come to recognize the plant more commonly as Canna, than anything else.

THE COMMON SPEEDWELL. — These pretty little plants, Veronicas, among the earliest of our wild flowers, although mostly introductions from the old world, assume the character of bushes and shrubs in Australia and New Zealand. Over sixty species are natives of the latter country. Some of them growing many feet in height.

BUD VARIATION IN ACHYRANTHES.—Mr. Ernest Walker, New Albany, Ind., says:—"So called 'sports,' in their origin ordinarily spring from variation in a bud, or single branch. The change in character is confined to only a portion of the plant. Instances in which the whole plant 'sports,' or abruptly assumes a new character, are far less common, if not rare.

Three years ago, however, a remarkable change of this nature came under the writer's observation.

The plant concerned was *Achyranthes Emersonii* of floral catalogues. The leaves of the variety are lance-shaped. One of these plants had been set out in the spring in a bed of miscellaneous plants. Becoming tall, it with the others, late in summer was severely topped. Some time after, the *Achyranthes* attracted my attention on account of its odd appearance. It looked so different, that my first thought was, that some one had removed the lance-leaved variety, and inserted another kind in its place. Examination however showed that no such trick had been played. The old leaves were all lance form; but those of all the new growth presented a singular transformation; and thus explained the state of affairs.

Instead of acuminate, the new foliage had become deeply emarginate or obcordate; while a contraction of the mid-rib caused them to recurve strongly. There was also a slight change in color, the upper surfaces assuming a darker hue. I thought at the time the variation was only transient, but propagated it, and the variety has proved permanent.

The young leaves at the tips of the shoots, while still very small are lanciform as in the original variety. The change in form as they mature is caused by arrested development of the terminal portion of the mid-rib."

THE NETTLE TREE.—It is not uncommon to see specimens of the *Celtis occidentalis* covered with small bunches of twigs, which are popularly called "crows' nests." No American tree seems to have them more abundantly. Almost all the crows' nests in other trees have been found to be produced by species of small fungi. Dr. Kellerman of Kansas City, states that in this species it is formed by what he considers a fungus hitherto indescribed, and which he calls *Sphærotheca phytoptophila*.

PINK INDIAN PIPE.—Mrs. J. H. Peirce, Dayton, Ohio, obliges us by a pretty painting of the pink form of *Monotropa uniflora*, collected in a small pine wood near Hampton, Virginia. Mr. Stewardson Brown reports that he has found the pink and white forms in proximity which shows that "environment" can have little to do with the variation. It is just possible that a critical examination might find other differences.

It is remarkable that of the many letters from correspondents about this, none have been received north of Philadelphia. Is the pink form not so widely distributed as the white one?

CANNA FLACCIDA.—SEE PAGE 36.

FINE SPECIMEN OF SARRACENIA.—In relation to the huge specimen of *Sarracenia purpurea*, referred to in *another paragraph*, our correspondent sends this additional note:—

"Upon close inquiry, I find that the supposed 'mountain bog' was a very wet and slushy mountain slope, rendered so by dripping icicles and melting snow. The mountain was one of the Blue Ridge ranges in southwestern North Carolina. The season was March, and my splendid specimen of *S. purpurea* grew among hundreds of others. The mountain slope (near base of mountain it was) was very stony (so reported) and under ordinary circumstances would be more dry than boggy."

CRINKLE ROOT.—It is remarkable that a plant which has excited such general interest as *Dentaria diphylla*, should have had nothing said of it in popular botanical or economic literature. Prof. C. F. Millspaugh, the well known botanist of West Virginia, furnishes another note:—"On page 57 a query is propounded in regard to the botanical name of Crinkle-root; it is *Dentaria diphylla* of *Linnæus*, and is otherwise known as Pepper-root, and Tooth-root.

How well do I remember in my boyhood days, the woodland rambles so often taken Saturdays with my schoolfellows, and the bread-and-butter lunches eaten upon a mossy rock, and savored with delicious Crinkle-roots, that served for water-cresses. How plainly again can I see my culinary idol, mother of my playmate cousin, as she said, 'Now boys, when you are in the woods to-day, gather me a nice lot of crinkle-root, and I will pickle it for you.' Forget her request? well no; nor would any boy had he but once eaten of Aunt Margaret's crinkle pickles."

DAISY.—The English daisy is, of course, well known wherever English literature exists. In America there has been a tendency of late years to call all composite flowers daisies. The *Chrysanthemum leucanthemum* is known as the ox-eye daisy, and various kinds of smaller plants grown by florists are all called daisies. In a trip recently to the interior of Pennsylvania, we found that the *Senecio aureus* was generally known as yellow daisy, and the *Erigeron bellidifolium* was Blue Spring Daisy. Popular will is paramount, so far as common names are concerned, and we suppose the *Erigeron*, in this part of the world, will always go by the name of blue daisy. This wild flower, by the way, is one of the brightest of May flowers, and has a very pretty effect in the wild flower scenery of eastern Pennsylvania.

MANGO FRUIT.—In our country the unripe fruit of melons are called Mangoes, and are used in preserves under that name, but the true Mango of India, belonging to a tree called *Mangifera Indica*, takes the place in that country of the apple in ours, and is placed there at the head of the list of fruits. They have as many varieties of Mangoes in India, as there are of apples in America.

THE BANEBERRY.—This pretty Eastern wild flower—at least pretty from its berries—has been confused with other species. Dr. Ed. L. Greene, in *Pittonia*, shows that it is a distinct species and should be known as *Actæa alba*, though it has red as well as white berries. It is distinguished by its thickened pedicels after flowering. The true *A. spicata* with which this has been confused Dr. Greene thinks not a native plant. He recognizes, however, a true *Actæa rubra*. The berries are cherry red, and the lowest leaf is inserted high above the ground. The *A. arguta* of the Pacific States he thinks but little different. There is yet another species of baneberry with greenish flowers, growing in Arizona and California, producing stalks in clusters from the roots, of which ripe berries have not yet been seen. It is *A. viridiflora*.

POISONOUS PLANTS.—It is remarkable how large a number of plants occasionally get the reputation of being poisonous, and yet when these plants are searched by acute chemists for the toxic property they are found to be wholly inert. Death undoubtedly follows the eating of many of these plants, but it is more due to indigestion, or some similar complaint, which might be induced by even the most innocent plant when taken in improper quantities or at improper times. Just now some of the newspapers are explaining that Egyptian corn is poisonous to cattle, but there is little doubt that it comes under the head above referred to.

THE SIDE-SADDLE FLOWER.—A lady writing from N. C., states that in a mountain bog in that State she found a specimen of a *Sarracenia purpurea*, which had fifty pitchers. It was so large, that a huge silver punch bowl was the only vase that would accommodate its abundant luxuriance, and a mass of gray moss was put in the bowl to raise the plant sufficiently to be well displayed. It was one of the chief attractions of the Floral Department of the State Agricultural Fair held in May of that year.

TEXAS JUDAS TREE.—Prof. Sargent, in *Garden and Forest*, adopts the views of prior botanists in making a distinct species of this, which will be known as *Cercis Texensis*.

GENERAL GARDENING.

THE BLACKBIRD.

O Blackbird! sing me something well.
While all the neighbors shoot thee round,
I keep smooth plats of fruitful ground,
Where thou mayst warble, eat and dwell.

The espaliers and the standards all
Are thine,—the range of lawn and park
The unnetted Black Hearts ripen dark,
All thine, against the garden, all.

TENNYSON.

THE ENGLISH HEATH.—It is a matter of surprise that this famous poetical plant is not more cultivated in the United States than it appears to be. It has been in prominent American nursery catalogues for many years, but we learn that the demand for it is very small, in consequence of people not knowing that it may be very readily cultivated. The great enemy to it is the sun, when the thermometer is very low. It would really grow near the North Pole, if only a light covering of leaves, snow, or anything that would protect it from the sun, be employed. It will not grow in heavy clay, or in any soil where the earth packs closely together, as the small hair-like roots cannot penetrate this stiff matrix, but wherever the soil is sandy, gravelly, or in any way so constituted that the little roots can push freely, it grows well. In our own grounds, we enclose a plant in a four sided frame, such as a soap box without a bottom, and then fill in three to four inches of sand, so that it gets in among the lower branches. It seems to thrive under such circumstances, even better than we have seen it on its native heaths.

DOUBLE ZINNIAS. — The double forms of Zinnia common in cultivation have been raised from a Mexican variety, known as *Zinnia elegans*. It is now said that another species, namely, *Z. Haageana*, has been improved in this way. As this is a dwarf bushy kind, the double flowers will make an entirely distinct class, which will no doubt be desirable for our gardens.

ALPINE PLANTS.—High in the mountain tops among rocks, and where there is scarcely soil enough for a plant to grow, those plants known as Alpine, flourish,—and what is the most remarkable, the more difficult it seems to be for a plant to get along under what is called the struggle for life, the more bright and beautiful are the flowers. No class of flowers are so beautiful as Alpine flowers. In the old world some few have attempted to cultivate them in rock work, and in various special places out of doors, but in America very few persons have undertaken their culture, yet there is nothing more easy to manage than these plants. They simply require to be kept in a cool frame during the summer season. A hot bed sash, or a north side of a wall or fence where the sun cannot shine upon it, is just the place to grow Alpine plants. The English primrose, Polyanthus or cowslip, and especially the Auricula, which are among the most gorgeous of the Alpine plants, grow remarkably well in this way. A few years ago there lived in Germantown a gentleman named Drake, who brought with him from England his love for these flowers, and he kept up until his death the cultivation of the Auricula, especially growing them in frames as we have described,—and not even the choicest out door flower garden could show so much beauty and interest as his frames filled with these lovely Alpine plants could do.

PROPAGATION BY LEAVES.— Morphologists tell us that there is no essential difference between a leaf and a branch; a leaf is in fact but a modified branch, or perhaps to give it more correctly, a branch is but a modified mass of leaves. This is well proved by the fact that many plants will grow and make plants as well from leaves as from branches. The Gloxinia of greenhouses is a familiar example. These are always grown from leaves by florists. The leaf is planted in the ground like a cutting, a bulb forms at the base, and a new plant arises. This is true of many other plants.

STAPHYLEA COLCHICA.—This beautiful species of bladder nut has long been cultivated in American gardens. It is now claiming some attention in the old world. There are few plants which pay the cultivator better to have among his collections. The flowers themselves are white, but the large mass of yellow stamens in the centre gives them quite a gay appearance.

TO MAKE SPECIMENS OF EVERGREENS.—A correspondent asks for more specific instructions than our paragraph on pruning evergreens afforded, as to the mode of making nice specimens without resort to the hideous shearing they often undergo. It is only to shorten the leading shoot, and use it as a stake to tie up a lateral

NORWAY SPRUCE.
With Leader Shortened to make a Specimen.

branch. This stump is cut away at the end of the year. The laterals contiguous to the stump may be shortened if desirable, but this is not essential. The growth force, checked in its ascent, flows to the side branches. It is wonderful, what a "fattening effect," this simple act has on the plant.

HARDY ORANGE.—The *Citrus trifoliata*, a deciduous species from Japan, is growing in public favor. Some large and handsome specimens in the Philadelphia Zoological Gardens attract general attention. The fruit is about two inches in diameter, unpalatable, but handsome.

THE KUDZU VINE.—This is probably the most rapid growing plant in the world. It belongs to the bean family. The leaves look something like a Lima bean, and was once called *Dolichos japonicus*. It will grow easily sixty feet in three months. It was introduced into America by the Japanese during the Centennial Exhibition. It is said that in its own country it has flowers like bunches of Wistaria. For some reason American summers do not seem long enough for it. It rarely blooms. It is used in Japan as a forage plant. Medicine is made from its roots. Flour also is made from the roots, which is as nutritive as that furnished by the potato; it is obtained by simply grinding in water, and the starch falls to the bottom. The peeled stems are made into cloth. The roots grow to an enormous size. The top dies to the ground sometimes when it seems like an herbaceous plant. It is extremely valuable for rapidly covering anything in one season, besides being always interesting to the lover of the wonderful, on account of its rapid growth.

PAULOWNIA IMPERIALIS.—Possibly the oldest tree of the Paulownia is in Independence Square, Philadelphia. It has now a trunk which may be fairly styled huge. It was from the first lot imported from Europe by the late Robert Buist, and was presented to the city by him. They had an uncouth growth, and after trying in vain to sell the ungainly objects he burned the whole stock. He had scarcely done this before the city tree bloomed! Few trees have a more delightful fragrance when in bloom, and its gloxinia-like blue flowers make it quite gay, and the immediate demand for it chagrined Mr. Buist. It is commonly known as the Empress tree.

GOOD ROADS.—Books of hundreds of pages are written on road making, yet the principles of successful road construction are very simple. It is water that injures roads more than any other element. The water freezes and expands, and when the thaw comes all is loose. Any one may have observed ruts to come in roads more readily after a thaw than at any other time. If attention were given to draining water from road beds, macadamized roads would last double the length of time they generally do.

GROUPS OF TREES. — Few objects in the landscape can excel in beauty, a single tree with a perfectly straight trunk, and with well developed branches on every side. But according to Milton even Paradise becomes monotonous to those not perfectly constituted, and poor human nature tires when every tree is cast in one mould, no matter how perfect that mould may be. Hence it is a great relief in good gardening to have groups of trees; trees so thickly planted that the head from a distance seems to belong to a single tree. Among photographs of features in our readers' gardens, we have selected one to illustrate this point, being a second growth of chestnuts with trunks eleven feet in circumference, on the farm of Mr. Jules Wellens of Lindley, Pa. (See p. 47). The old tree had been cut away years ago, and the sprouts have formed distinct trees. All will admit that such groups of trees furnish special objects of landscape beauty.

We can learn a practical lesson from these second growth trees. They are as large as many originals would be. It is a common belief that the same kind of tree will not do well following another. Few would plant a young apple orchard on the site of an old one, but the fact of these second growth chestnuts doing as well as originals shows that such a rule is by no means absolute.

CANADA THISTLE.—It is said that this weed was not known in the South until after the war. It was probably introduced from the North at that time, and is now said to be getting rather common in W. Va. A State law was passed several years ago requiring owners of land under penalty to rid their lands of this troublesome weed, but no one seems inclined to enforce the law; such laws never are enforced. It is much better to teach farmers how to rid themselves of weeds easily than to worry about laws to provide for their destruction.

CHINA ASTERS.—The great effort with lovers of China Asters is to get them to bloom early, and if one can boast of having them in bloom early in June, he is generally envied by his next neighbor. Florists also enter into this pleasant competition, and those who get them in bloom in June get double the price for the cut flowers than they can in July.

SULPHATE OF IRON.—Notwithstanding the caution continually extended, that sulphate of copper must be especially selected for solutions in the destruction of fungus diseases, we have had a suspicion for some time that it is just as much the sulphur as the copper which causes the destruction, and that other forms of sulphur would be just as effective as the copper solutions, and perhaps not so liable to be poisonous to animal life,—and we have especially thought that sulphate of iron would be just as good as sulphate of copper. Not having any direct evidence of this, however, we have had no desire to interfere with the copper solution projects. We now notice, however, in "Gardening Illustrated," an excellent English horticultural periodical, that sulphate of iron has been tried, and has proved just as effectual as the copper solution. We think, however, that more careful experiments should be made in our country with this, before accepting such a statement as final.

FORESTRY IN NEW HAMPSHIRE.—Efforts are being made in the State of New Hampshire to enter into forestry largely. It is said that agricultural pursuits have been abandoned to such an extent that possibly 160,000 acres of land could be bought for $1 an acre. The white pine is at home in that State. There surely ought to be some way to make forestry profitable. Some are scattering seed heavily over these waste lands, but though nature can raise forests in that way, man has never yet been successful. The only way to make a forest profitable is to clear the land of vegetation, plant year old trees, hoe and harrow for a year or two until the trees are able to keep down everything else.

PRUNUS TRILOBA.—This Chinese shrub which has large and beautiful double pink flowers, flowering very early in the season, has not made headway in cultivation since its introduction in 1857. Some surprise has been expressed that so beautiful a shrub is not more common. We find, however, that it is extremely liable to a fungus disease, closely allied to the fire-blight in the pear, and to which also the double-pink Almond, a relative, is also liable. It is extremely destructive, and it is very difficult to keep a stock of either this double pink Plum or the Almond.

JAPAN PRIVET AS HEDGE PLANTS.—*Ligustrum Japonicum*, or Japan Privet, is rapidly growing in favor as a hedge plant,—its special recommendations being the ease with which it transplants, the uniformity of growth, and the length of time it holds its rich green leaves.

TRICOLOREDJAPAN PRIVET.
Leaves White, Yellow and Green.

For lines where large fences would necessarily tend to apparently lessen the size of a garden or lawn, this beautiful shrub is especially adapted. Cut close to the ground it rapidly springs up with numerous sprouts, which can be cut as low as eight inches. As before remarked, it is a sure grower, only a very small quantity of roots being necessary to insure life.

There is a tricolored form which bids fair to become a great favorite. This form combines all the good qualities of the former with the pretty colored leaves of the latter. This also makes a fine ornamental shrub. The yellow tint of the leaf is not always brought out,—and it is frequently known simply as variegated Japan Privet.

CRIMSON CLOVER.—Many a time during the past century Crimson Clover, *Trifolium incarnatum*, has been introduced for trial with the idea that it would be better for agricultural purposes than our common red clover. Experimenters always return to the red clover. Just now there are again trials with the same plant. It is so beautiful that it is to be regretted that it cannot maintain any foothold in American agriculture.

VENUS PAINT BRUSH.—Mr. Horsford says in the *American Garden* that this is the common name of *Hieracium aurantiacum*, which he says is also called by some of the Vermont farmers Devil's Paint Brush, on account of its troublesome character as a weed. It is to be hoped that the latter name will prevail as between these two, because the Venus Paint Brush is well known to be applied to *Cacalia coccinea*.

INFLUENCE OF THE MOON ON VEGETATION.—Mr. C. M. Rea, of West Middletown, Pa., writes that there is still a controversy among planters in his vicinity as to whether planting should be done in the first or dark half, or in the second or light half of the moon. He desires our opinion as to whether the moon has or has not any influence on successful planting. We can only say that it is barely possible moonlight may have some influence on vegetation, though nothing has been definitely proved. So far as planting is concerned, if it have any influence, it is too small to be worth regarding. Millions on millions of trees are successfully planted without the slightest regard to the moon's signs.

SILK WORMS.—Some genius in Syria, named Monsa Rhouri, has discovered the secret by which the silk worm makes silk. He can make the silk by machinery without the aid of the silk worm. In this way the cost of making silk can be reduced one half. A manufactory is to be started in Georgia soon by a Syrian colony. To manufacture silk in this way a large tract of land has been secured on which to plant mulberries and the emigrants expect soon to make their fortunes.

LONICERA STANDISHII.—For over a quarter of a century we have had in our gardens an upright Honeysuckle known as *Lonicera fragrantissima*, not very showy but a desirable shrub for gardens by reason of its very early flowers and sweet odor. We have since imported and recently flowered *Lonicera Standishii*, and find it to be but a slight variation of the same thing.

PLOUGHING BY NIGHT.—California does not believe in having capital stand idle. Equipping plough engines with locomotive head-lights, so that the tilling of the toil can go on night and day, is the latest industrial thought.

DOUBLE FLOWERS.—Dr. Nobbe of Tharant, says that in sowing seeds of stock-gillies, those plants which appear first produce double flowers,—and those which are the last to appear after sowing, produce single ones.

THE GARLAND FLOWER.—This is the popular name employed by *Popular Gardening* to indicate the *Daphne cneorum*.

PERUVIAN TRUMPET FLOWER.—The *Brugmansia suaveolcons* will not endure frost, but it stands very rough treatment, and hence is a favorite plant everywhere for summer decoration. The plant can be taken up and easily preserved in a cellar. The numerous large white trumpet shaped flowers render it very attractive, outside of the particular sweetness, which is one of its characteristics. We notice that in the old world some one has given it the name of Peruvian Trumpet Flower. The Bignonias of our country are usually called Trumpet Flowers, but with the name of Peruvian attached to this, it may perhaps be a name that will come into common use.

VITEX AGNUS-CASTUS.—It is remarkable that this very pretty, low, free flowering, hardy Italian shrub, should have been known in gardens for nearly 300 years and yet be so seldom seen. The ends of the branches die back in severe winters,—but never enough to prevent an abundant bloom all through summer and fall. It is commonly known as the chaste shrub,—a translation of the specific name. (See p. 44).

IMPROVING THE TOMATO.—The notes made recently on the improvement of garden vegetables have excited much more interest than expected, and shows the wide field open for continued discussion of the subject. Looking around it is evident much more attention is being given to the development of special points than is generally known. In the tomato, for instance, all know when the frost threatens how great is the desire of the amateur gardener to prolong his favorite crop. The plants with the fruit are hung in cellars, sheds, or other protecting places,—or the fruit itself spread on shelves to keep fresh as long as possible. It seems Mr. G. S. Carman, well-known as a judicious and successful experimenter, has had his attention turned to this subject, and after several successive generations has produced a variety which is peculiarly preservative. This he has named after his friend, the well known New York seedsman, "Thorburn's Long Keeper." It would be well to have experiments made in these special lines with other vegetables.

FRUITS AND VEGETABLES.

CULTURE OF CELERIAC.—We are much indebted to A. L., New York City, for the following valuable information regarding turnip rooted celery: "I think I can give a few hints as to successful growing of this healthy vegetable, being personally familiar with it. After danger of late frosts is over, the plants raised from seed sown in boxes about January 1st to 15th, and thinned out later on, should be planted out about twelve inches apart each way in a rich deep soil, containing a goodly percentage of sand. In a few weeks the plants will have formed a strong growth of leaves, shading all the space originally left between each plant; now most of the outside leaves should be pulled off, and can be sold profitably with soup greens. This is done repeatedly, as often as the plants become crowded.

I have seen on the European continent celery roots raised in the open field in this way and hoed up like potatoes, which were of six and more inches in diameter and several pounds weight a piece, and perfectly tender. In Moravia, Austria, it is cultivated the same way as the sugar beet and attains an enormous size and weight. You will see that this mode of cultivation yields an income on the leaves alone, which will pay for the seed and cultivation, and the tubers are left as your profit."

AGED PEACH TREES.—Although the peach tree is usually considered short lived, there seems to be no real reason, outside of circumstances and conditions, why they should not live as long as other trees. There are some instances of very aged peach trees, and possibly one of the oldest is in Mifflin County, Pa., on the farm of Jacob Hoover in Fermanaugh Township. When he bought his farm, which is now forty years ago, the tree was then in full bearing, so that its exact age is not known, but it is safe to say that it is about fifty years, and by all accounts it is yet in perfect health, and bearing bountiful crops yearly. We should be glad to know if there are any other older trees than this known in the country.

TURBAN SQUASH.—This well known vegetable appears in English catalogues as Electors' Cap Vegetable Marrow. A new name is often as great a novelty as the article itself.

Cost of Raising Mushrooms.—An English grower, who makes a specialty of raising mushrooms for market, has given statements of the cost and value of the product from his mushroom beds. Manure, labor, and eight bushels of mushroom spawn cost him about $50, while the product sold between October and the following May was 661 pounds in weight, for which he received $225. One great advantage of mushroom culture is, that while most vegetable crops are produced, and have to be rushed to market within a short time, that crop is over for the season, while one bed of mushrooms will continue to yield every few days, sometimes regularly for fully six months.

THE CHASTE SHRUB.—SEE PAGE 43.
Flowers Pale Blue.

English and American Peaches and Nectarines.—Notwithstanding the abundance of peaches, nectarines and apricots in our country, the English contend that with their more thorough knowledge of cultivation under glass, they are able to produce fruit finer in quality and larger in size than we can obtain them in our country,—and they are continually boasting of the size and quality of the fruits which they raise in this manner. Just now a correspondent of the *Journal of Horticulture* claims to have raised six nectarines, which together weigh two pounds and seven and one-half ounces. The largest of the fruit measured nine and a half inches in circumference. We should like to know whether any of our own people have produced fruit exceeding these figures.

Raising Fruits from Seed.—A correspondent inquires if the seeds of Baldwin, or of other varieties of apples be sown, the kinds will be reproduced; and whether this is true of Pears or other kinds of fruits. To a considerable extent this is true, but there are always some slight variations. Either the fruit is larger or later, or not quite as good, or in some slight degree it varies, although not sufficiently so to be considered distinct; occasionally, only, some very distinct form will occur, and it is in such cases that we get our improved varieties. The Peach is more likely to come true from seed than other fruits, and, indeed, some varieties, like the Columbia, Smock, and a few others, come so nearly alike that some have established orchards from seed in that way. As a general rule, however, the variations are sufficient to spoil the object of the fruit grower who wants to have exactly that for which he is looking; and for this reason, it is considered a rule to depend wholly on grafting in order to secure the exact variety desired.

Echasserie Pear.—Mr. James R. Gates, the President of Philadelphia Select Council, sends us a basket of this old French pear, to show its supremely delicious character. This variety must be between 200 and 300 years old, being one of the most popular French pears of the last age. When people talk of the wearing out of varieties of fruits, they must mean that the variety has deteriorated from culture, or that some unfortunate attack of a fungus character has destroyed it. Outside of this there seems to be no limit to the duration of varieties. We believe this pear has been also under cultivation as the Walnut pear, the fruit being exactly the form, size, and color of the mature black walnut. We suppose it is the boom given to new varieties which causes the disappearance of some of these good old things, rather than any inherent defect in goodness of their own.

New Bark in the Trees.—It is not a new fact, but yet a remarkable one, that if a fruit tree, Apple, Pear or Cherry, be stripped entirely of its bark in the second week in June, a new surface of bark will immediately take the place of the older one. It is believed that the chief growth of deciduous trees in our part of the world takes place at midsummer.

BAGGING GRAPES.—People often ask what is the use of the abstract studies scientific men and women often indulge in. The reply is you must first discover a new truth before you can tell whether you can make any value of it. The valuable discovery that the black rot can be prevented from injuring grapes by enclosing the bunch in a paper bag is the direct result of scientific studies. When it was found that the rot was caused by a fungus growing from a little seed or spore which, floating through the atmosphere, attaches itself to the grape berry, it was the easiest thing to think of putting bags over the bunch early in the season so that the spore couldn't get there. Hundreds of thousands of dollars have been saved to the cultivator by this bagging of grapes which would have been totally lost but for the labors of scientific men.

THE CURRANT BORER.—People often wonder why their currant bushes grow weakly; now and then a strong vigorous shoot will appear, while most are puny. In most cases this results from the work of the currant borer. If a branch be cut across it will be found hollow. This channel is where the borer has been. Only a very small black puncture on the outside of the stem shows where the insect laid the egg. If one could get used to noting this puncture in the fall of the year, and cut out such twigs and burn them, it would help currant culture.

MUSHROOMS.—In planting mushrooms, the time that the mushrooms appear after planting the spawn is very variable. A correspondent of the *Gardening World* states, "that he planted the spawn on the 4th of July, and on the 31st of July following commenced gathering his crop." When they begin to bear, mushrooms in these artificial beds will continually allow of some gathering every day, extending over from six to eight weeks.

THE SHARPLESS STRAWBERRY.—*Popular Gardening* says that the largest berries of this variety in western New York are usually seven inches in circumference. The variety called Cumberland usually reaches five. We hardly think that there is this great difference generally. A good Cumberland is seldom much less in circumference than selected Sharpless.

THE POTATO STEM-BORER.—A Western paper says that, "a new enemy of the potato vine has made its appearance in Michigan. The vine when attacked begins to wilt at the top. In the hollow of the stem is found a worm nearly an inch in length which appears to sap the life of the plant." But this is not a new enemy, as its work was discovered by Miss Margaretta Morris of Germantown, Philadelphia, over a quarter of a century ago. It is known to entomologists as *Baridius trinotatus* As the larva does not leave the stem till after the stalks become dry, burning the stalks at once when the potatoes are dug, keeps the enemy from increasing. This insect was once a fearful enemy to the potato in Eastern Pennsylvania, but the annual burnings for years after it was discovered have kept it from being troublesome.

FORCING STRAWBERRIES.—There is no fruit that requires so little heat to bring fruit early as the strawberry. In the open air the first warm sun starts the flowers into growth. Fruit may be had three weeks earlier than in the open air by planting them in common hot bed frames. Those who have a little time to look after sash with strawberry plants set out in this way, would find the work among the most pleasant, and in some respect as profitable, as any kind of outdoor gardening.

CIDER MOLASSAS.—This is the name given to a preparation, which is getting boomed considerably in the Western States, but we suppose it is what is commonly known in other parts of the world as apple butter. It is a matter of surprise that it is not oftener found in provision stores than it is. There is little more art in making it than boiling the cider until all the liquid portions have been evaporated.

LARGE APPLE TREES.—There is a great deal of discussion in the agricultural newspapers as to where is the largest and oldest apple tree in America. A very fine one is said to be near Weathersfield, Conn. It was said to have been planted in 1640, and is still bearing well. It is unlikely there are any much older than this.

BIOGRAPHY AND LITERATURE.

HOPELESS.

What bird can sing when storms are in the sky,
When flowers and verdure from the turf are gone?
How can the 'nighted traveler carol on
When winds are loud, and lightning flashes by?
How can the lip smile, when all prospects die,
When earth is but one cold and lifeless waste?
And how can pleasure brighten up the eye,
When hope has, like a lovely night-dream, passed.

PERCIVAL.

MEMOIR OF DR. LAPHAM.—Mr. Aikens, to whom we were indebted for permission to use the beautiful portrait of the famous botanist, Dr. Lapham, in our last, was the publisher of the prize essays. Mr. A. W. Rich offered the prize to the lady who should be conceded to have named the most distinguished deceased citizen of Wisconsin, and the results likely to flow from this effort, namely, the doing deserved honor to this great scientific man, must be credited wholly to Mr. Rich.

JAMES TAPLIN.—Among the many severe losses horticulture has lately received, must be recorded the name of Mr. James Taplin. His love for America induced him to throw up his position as one of the successors of the famous Sir Joseph Paxton at Chatsworth in England, and take the position of manager to Mr. George Such of South Amboy, New Jersey. Of late years he pursued the florists' business. His pen did great service in advancing American horticulture.

SIR WILLIAM JACKSON HOOKER.—As the years go by the great value of Sir William Hooker's services to botany and gardening are becoming more and more appreciated. The great and successful work, the *Botanical Magazine*, had nearly come to a stand still until his energetic pen and pencil came to its relief,—and the same is true of the Kew Gardens. It was his singular ability in knowing how to please the people at large, how to conciliate royal and official favor, and at the same time know exactly how to administer to the wants of botanical science, that brought up these gardens from a comparatively low ebb to be the admiration of the world. We have talked of establishing botanical gardens with the hope that they would become as famous as those of Kew. We must remember that we cannot create a Sir William Hooker to develop them.

OMAR KHAIZAM'S ROSE.—Mr. Howard Worcester Gilbert, of Woodstown, N. J., sends the following interesting notes. Quite as much interest would attach to a rose from the grave of the great Persian poet, as there is in a willow from Napoleon's tomb. Associations of this character are always pleasing:—

"The following paragraph is copied from a letter dated Naishápúr, in Persia, (a country which more than any other has a right to the name 'The Land of Roses') written by Mr. William Simpson, one of the traveling artists employed by the London *Illustrated News*. This rose would, probably, be a new and beautiful variety, and would possess a very high additional charm through its associations. I hope you may be able to introduce it into Philadelphia.

"'In front of the Imamzadah,* is the garden with some very old and one or two large trees, but along the edge of the platform in front of Omar Kháizám's tomb I found some rose bushes; it was too late in the season for the roses, but a few hips were still remaining, and one or two of these I secured, as well as the leaves,—some of which we have enclosed for you; I hope you will be able to grow them in England,—they will have an interest, as in all probability they are the particular kind of roses Omar Kháizám was so fond of watching as he pondered and composed his verses.'

"The seeds gathered by Mr. Simpson were, on their arrival in England, handed to Mr. Baker, of the Kew Gardens, who planted them. They grew successfully, and have, probably, ere this time, produced flowers. "The Omar Kháizám Rose" would certainly, if a beautiful variety, be the queen of its kind."

*The tomb of the son of the Imam.

ALFRED HUIDEKOPER.—One of the most distinguished of the amateur horticulturists of the West, Alfred Huidekoper, died at Meadville, Pa., on the 13th of January. He was born in that town on the 21st of May, 1810. His ancestors settled at Meadville in 1804. They were natives of the Netherlands. He bought all the lands of the Holland Land Co., in Pa., in 1836, and spent most of his life in supervising, with great discretion and ability, these large estates, which finally fell into the hands of two sons, of which the subject of this sketch, Alfred, was one. In 1832 he studied law under John B. Wallace of Philadelphia, but relinquished his practice on the death of his father. Like so many horticulturists, he was eminently public spirited; was warmly devoted to his native town; closely connected with all its improvements and charities. He built at his own expense, the Town Hall, which is now the public library; was warmly interested in the Meadville Theological School, retaining his interest in it to the last. In the question of public parks for the people, he took a warm interest, and his garden was filled with the best treasures in fruits and flowers. He was particularly fond of the culture of the foreign grape under glass. In this, he particularly excelled, and was looked up to as one of the leaders in that particular branch of fruit culture. He was a regular contributor to the *Gardeners' Monthly*, and his articles were always read with especial interest.

A GROUP OF CHESTNUT TREES.—SEE PAGE 41.

MICHAUX.—The government of France, through the Emperor, presented to Michaux a gold medal as a testimonial to his valuable labors in American Forestry. After Michaux's death, this medal passed into the possession of the Cincinnati Horticultural Society, where it is regarded as one of its leading treasures.

FAIRCHILD was a florist who resided in the village of Hoxton, England, and died in 1667. Though scientific history gives the credit of distinguishing sexes in plants to great men whose names occur later, Fairchild seems to have not only known of the distinction but to have turned the knowledge to practical uses. He crossed the Sweet William and the Carnation and thus raised the "Mule Pink" which continued in cultivation almost to our time,—if indeed it has yet wholly disappeared. This is the first instance on record of any hybrid plant. Fairchild was a rare lover of nature. He left a sum of money to the preacher of his parish, that he might set forth the omnipotence of the Creator by means of an annual flower service in the church,—a service which has recently been revived in some churches in America.

GENERAL NOTES.

Progress of the Magazine.—It is now about a year since the firm of Thomas Meehan & Sons decided to go on with this monthly magazine. They are nurserymen, and had no desire to be book or magazine publishers. Regular publishers seemed to feel that there was not that widespread love of flowers and of gardening in America, that would warrant a magazine of high class, appealing directly to this love, rather than to the mere dollar and cent phase of commercial gardening. The firm knew Americans better. Without any of the machinery or organization requisite to a publishing business by which they could at once cover the whole literary field with the publication, they determined to risk a large fortune in the enterprise, though well knowing that with only the good-will of friends to depend on, the actual subscription list must necessarily be of slow growth, and that it must be several years before they should see their money back again.

It is gratifying to feel that their faith in educated Americans has not been placed in vain. The subscriptions show the healthy continuous growth they hoped for, and the permanency of the enterprise is now beyond all question. They are issuing a very large edition, which they have decided in justice to advertisers shall never be less,—the surplus beyond subscriptions going as sample numbers to those who in all probability will appreciate them, and who have not yet been taken into the pleasant circle of flower loving literature.

Not being publishers, they have to fall back on the friends of the enterprise to help them to the desired circulation. There are numbers of wealthy intelligent people who love flowers and gardening, and who would rejoice to know of a work like this. They simply ask friends to send them lists of these. They will gladly mail the surplus copies as samples to them.

The Wild Flower Pictures.—This magazine is to be a work of reference for all time, and hence the publishers have been most anxious that the colored plates of our native flowers, one of which is given with each number, should be impressed on paper showing no change under the hand of time, that so many aged works show. But the action of the Post-office authorities in pronouncing any protecting material illegal, dealt the effort a staggering blow. That decision has been reversed and cardboard protector is now used, —but there is no telling when a Post-office vagary may return, and cause us no end of trouble. It has been thought to experiment with paper, that may be in a measure self-protective, and yet have all the permanence so heartily desired. Its use begins with the present number. Should any crease show, it will disappear under light pressure. In case any real defect should be discovered, the best thanks of the publishers will be tendered to those sending word of any serious injury to the plate under the new style of paper.

Our Condensed Articles.—In these times when there are so many magazines and papers the head of the family must subscribe for—so much to read while our days grow no longer in the land—we claim as a great merit, the condensed form in which our articles appear. Under this system, we are sure we give as much real information as if we had double the number of pages to prepare. There is no temptation to literary padding. We would refer by way of illustration to the article on "making specimen evergreens," by one of the junior editors. It would have been easy in the olden time to have spun this out to a ten dollar article, and told then no more than this article tells.

Our Next Plate.—One of the most beautiful and best known wild flowers, *Trillium erectum* will be the subject of our next plate. Besides its beauty, it has considerable botanical interest that students will appreciate.

TRILLIUM ERECTUM.

THREE-LEAVED BIRTHWORT.

NATURAL ORDER, TRILLIACEÆ.

TRILLIUM ERECTUM, Linnæus.—Stems thick; leaves rhomboidal, acuminate, sessile, peduncle inclining; flowers nodding; petals ovate, acute, scarcely longer but much broader than the sepals. (Wood's *Class Book of Botany*. See also Gray's *Manual of the Botany of the Northern United States*, and Chapman's *Flora of the Southern United States*.)

In the endeavor to select one of the most popular of common names for each of our illustrations, a difficulty is often encountered in the fact that botanists do not seem to exercise the same care in their researches in this department that they do in other branches of science. In Dr. Gray's "School Botany," for instance, *Three-leaved Night-shade*, *Wake-robin* and *Birthwort* are given as popular names for the whole genus. In his Manual of Botany, the generic common name is limited to "*Three-leaved Night-shade*;" and one species only—the one we now illustrate—is given to *Birthwort*. Professor Wood gives it as *Bath-flower*, which is probably a misprint for *Birthwort*, and, as others have used the same name in connection with this species, we have adopted it as our leading one here. The name is derived from its medical use among the Indians, who believed it relieved the pains of parturition. The common name of the whole genus, *Three-leaved night-shade*, comes from the fact that the early botanists classed it with the *Solanum* or *night-shade* family, and it may be noted here that there can be few better illustrations of the great progress which has been made in Botanical knowledge, as there is really not even a distant relationship between a *Trillium* and a *Solanum*.

Our present species was one of the first of American plants to be made known to Europeans, for Cornuti, who in 1635 issued in Paris a treatise on Canadian plants, describes this, and gives a very good figure of it, under the name of *Solanum triphyllum Canadense*, and it is indeed from this that we date the common name of *three-leaved night-shade*. As it is not a night-shade some might believe in the propriety of changing it; but it is best to look on the name of a plant as we would the surname of an individual, as merely a name and of no descriptive value. Moreover, there is often a great value in an old name though not appropriate in some respects, as in this instance where it gives the clue to its ancient Botanical history. Bauhin who wrote in 1671, also makes a reference to our plant, it having been sent to him from Paris, he tells us, by Burser a famous Italian botanist of that time, whom he says had it from Brazil, and from which he names it *Solanum triphyllum Brazilianum*, though with some misgivings that it was not a *Solanum*, even as they understood the night-shades to be. As to Brazil, it may be noted that the whole genus *Trillium* is confined to the North American continent, though a single species is found just beyond the boundaries of the continent in the Russian territory. Other plants were supposed by these Italian botanists to have been obtained from Brazil—the *Jerusalem Artichoke*, *Helianthus tuberosus*, also a true native of the North American Continent being one, and as other writers of the same period refer to Virginia as an "Island," and make other geographical mistakes, it helps us to understand how a mistake in the native place of the *Trillium* might readily be made. Later Botanists associated our plant with an European genus, *Paris*—*Paris quadrifolia* being the popular herb *paris*—or herb true-love of that country. It was so regarded by Linnæus in his earlier works, and our plants were known as "American herb *paris*." The European plant has four leaves in a whorl, while ours has but three. It was from the four leaves that it obtained the name of herb true-love, the four broad leaves representing what is commonly

known as a "true lovers' knot, and "herb *paris*" has the same signification. Philip Miller, the celebrated English gardener, was the first to distinguish it as a separate genus from *Paris*, calling it *Trillium*, from the Greek word *trilax*—three,—and this was ultimately adopted by Linnæus. In Miller's time there were only three species known. At that time the practice of having but two names for plants, the generic and the specific, had not been adopted. The three known to Miller he describes as: *Trillium flore pedunculato cernuo*, *Trillium flore pedunculato erecto*, and *Trillium flore sessile erecto*. These are now known under the Linnæan names of *Trillium cernuum*, *Trillium erectum*, and *Trillium sessile*.

We give this matter in detail here that the student may understand in what manner Linnæus usually obtained his names, which was as we see here simply by striking out some of the descriptive terms, and retaining one of those which had been already in use. Another lesson may be here derived from the use of botanical names. When only these three were known the names were good enough. There was, one without any stalk, *Trillium sessile;* another with the stalk bending from the start, *Trillium cernuum;* and one starting, at least, erect. The last is our present species. No one would dispute the appropriateness of the name then. But since that time others have been discovered which have the flowers more erect than the *Trillium erectum;* and this has worried some botanists, notably Sir J. E. Smith, as to lead to suggestions about changing the name. Modern botanists, however, adhere rigidly to rules of priority, taking care not to be deceived by names, treating them simply as names, and regarding the author's descriptions and not the names as conclusive.

After all, plants are often found to vary so, that no character that can be expressed in a single term is likely to be exactly accurate, and variation is especially characteristic of the genus *Trillium*. In the single character of the erection of the peduncle there are forms of this species which are much more erect than the one we have here illustrated. This one would be probably called by Dr. Gray, *Trillium erectum* variety *declinatum*, which he describes in the "Manual" as having a "peduncle fully half the length of the leaves, horizontal, or soon becoming so, or in fruit almost deflexed." But then he describes the variety *declinatum*, as having "petals white, rarely pink;" while our form has them of the "dark dull purple," he considers the typical form.

Again in the description we have taken from Professor Wood, because it seemed to cover better all the varieties of the species, we may note that the petals are scarcely longer, but much broader than the sepals. In our drawing which is an accurate representation of the specimen chosen for illustration, we see that these proportions are not exactly preserved. Again Dr. Gray preserves a variety with the botanical name of *Trillium erectum album*, from mere color, "petals greenish-white, ovary mostly dull purple;" and of the "variety *declinatum*" he says, "sometimes confounded with *Trillium cernuum*, if not passing into it." These facts give the student an excellent lesson in variation. It shows that even "species" is scarcely a definite idea in nature. It is rather a collection of forms having a closer relation to each other than in the idea of genus, and that we may rarely expect to find a description of a species to be so accurately drawn, that a specimen we may find will exactly conform to it in every particular.

The *Trilliums* grow mostly in woodlands, and generally in shady places. Though diffused over a great extent of territory they seem seldom to increase much in any locality wherein they may be found. The root makes a new bulb every year when the old one dies. Our specimen was obtained from the garden of Norton Johnson, Esq., of Germantown—probably from the Western States (Ohio?) originally; but though it must have been there at least thirty years, it had less than a dozen shoots, but few more than when first planted. Those who have attempted to raise them from seed, report it a very slow process to get flowering plants in that way.

WILD FLOWERS AND NATURE.

THE SPIRITS OF SPRING.

The sun is on the waters, and the air
Breathes with a stirring energy ; the plants
Expand their leaves, and swell their buds, and blow,
Wooing the eye, and stealing on the soul
With perfume and with beauty. Life awakes;
Its wings are waving, and its fins at play
Glancing from out the streamlets, and the voice
Of love and joy is warbled in the grove.

PERCIVAL.

A NATIVE WHITE COLUMBINE.—A correspondent says :—"In 1852 I crossed the plains, but did not go for Botanical purposes at that time. Little was then known of the Flora of the plains. I have regretted ever since that I was then unprepared to examine the plants. On that trip I found an *Aquilegia*, with pure white flowers, about three inches across and with very long spurs. At that time *A. coerculea* and *A. chrysantha* were not known. The white one was much larger than coerulea, pure paper white, longer spurs, otherwise much like it in general appearance. I took up some plants of it and tried to save them, but could not and there were no seeds fit to gather. I found this plant on the spurs of the range, 75 miles from Salt Lake, on the old traveled route by Fort Bridger. It grew high up in amongst the red cedar, which you may calculate would be 7000 feet in altitude.

Now, has this plant ever been collected to your knowledge, or have you ever heard of any one who has seen it? for I might be tempted to take a trip to Salt Lake and look it up if it is not already introduced."

PHENOLOGY.—Flowers come into bloom at different periods of the year, forming the opportunity of making what are known as "Floral Calendars." This particular branch has recently received the name of phenology. It would be hard to do much with this study in our climate, for we find some flowers that are ahead of their neighbors in blooming one year, are later instead of earlier the next. After all, even that variation may be considered as an important branch of phenology.

SWAMP APPLE. EXCRESCENCE IN AZALEA NUDIFLORA.—A Waterbury, Connecticut, subscriber remarks an explanation in regard to the nature of the excrescence often attached to *Azalea nudiflora*, and known as "swamp apple," would add value to the very interesting chapter on this plant, given recently. It was once supposed to be an insect gall but this is now known to be erroneous. It is more of the character of the "knot," found on the plum tree, which is now known to be caused by a minute fungus, *Sphaeria morbosa*. We do not know that the exact fungus which causes all the floral organs in the *Azalea* to become a pleasant acidulous excrescence has ever been determined, but no one doubts it is a minute fungus which causes it.

SARRACENIA PURPUREA.—*A fine Pitcher plant.* Mr. Wm. F. Bassett, Hammonton, New Jersey, says :—

"That North Carolina big *Sarracenia purpurea*, will please take a back seat. I have one in my greenhouse, which we found last fall, with seventy-one pitchers. These pitchers were all sound when we collected it, but it has been kept under the bench through the winter with very little attention, and find that the snails have ruined several of the pitchers. By the way, I think if it was generally understood how easy it is to handle this Sarracenia as a pot plant, and what a beautiful plant it is, it would be quite generally used for this purpose."

A BEAUTIFUL CALIFORNIA EVENING PRIMROSE.—Mr. Charles Shinn notes in the "*Garden and Forest*," that *Œnothera ovata* is one of the most beautiful of all the wild flowers of California. He notices that on the 10th of May every vacant lot in the town of Berkeley was golden with the shining blossoms of this evening primrose. He says it continues in beauty for three or four months. He found 15 open flowers on a single plant at that time, and 36 apparent buds unopened. Each of the petals was as large as a fifty-cent piece.

THE AZALEA NUDIFLORA.—"In speaking of the Azalea referred to by Plukenet," says W. F. Bassett, Hammonton, New Jersey, as a "variety larger than *A. viscosa*, you say it was evidently *Azalea nudiflora*. It seems to me more likely to have been *Azalea calendulacea*, which is considerably larger, and has little if any fragrance. I have seen very few *Azalea nudiflora* recently, but my impression is, that its flowers are no larger than *viscosa*. Referring to the signification of the name and the places where we find Azaleas to grow, it not infrequently happens that this depends as much upon whether the seed finds favorable conditions to cause it to grow as upon the adaptation of the plant while growing. In a Southern climate we often find plants in bogs, which at the North grow in upland, and as nearly as I can recollect, almost all the *Azalea nudiflora* I ever saw in Massachusetts, were growing in high and dry land. Another point which I have also noticed, our *Azalea nudiflora* there, was very sweet, as much so as is *viscosa* here; but the New Jersey specimens I have seen are very slightly fragrant, or lacking entirely in that quality. Then again, in the extract from Kalm's travels, he says: 'I do not see why Colden calls them yellow.' This too is readily explained by supposing that Colden was describing *A. calendulacea*."

[Is there any evidence that any botanist had been collecting in North Carolina, where *A. calendulacea* grows, at that early date?—*Conductor.*]

THE WOOD HONEYSUCKLE.—John J. Carter of Chatham, Pa., writes:—"When sixty years ago 'we children,' used to go to the woods for the 'apples,' it was said the uppermost leaf on the plant pointed in the direction we should find another, and the rule proved good generally. Do the children of to-day enjoy the wood rambles among the azaleas we did? I hope so. We occasionally found varieties pure white."

GIRDLED PINES.—We have placed on record that the Austrian Pine, and *Pinus ponderosa*, will live many years and increase in diameter above the girdled part. *American Gardening* records the same of a Scotch Fir. The specimen is preserved in the museum of the Indiana Horticultural Society at Indianapolis.

WEEDS OF NEW JERSEY.—Prof. Byron D. Halsted makes the following report regarding the weeds of New Jersey:—

The 30 worst weeds of New Jersey in the order of their vileness, as determined from the reports of the observers above referred to, are as follows: Wild carrot (*Daucus carota*), ox-eye daisy (*Chrysanthemum Leucanthemum*), sorrel (*Rumex acetosella*), plantain (*Plantago major*), curled dock (*Rumex crispus*), ragweed (*Ambrosia artemisiæfolia*), Canada thistle (*Cnicus arvensis*), purslane (*Portulaca oleracea*), burdock (*Arctium lappa*), toadflax (*Linaria vulgaris*), wild onion (*Allium vineale*), mayweed (*Anthemis cotula*), goosefoot (*Chenopodium album*), yellow daisy (*Rudbeckia hirta*), pigweed (*Amarantus chlorostachys*), quitch grass (*Agropyrum repens*), horseweed (*Erigeron canadensis*), beggar's ticks (*Bidens frondosa*), water pepper (*Polygonum hydropiper*), shepherd's purse (*Capsella bursa-pastoris*), pepper grass (*Lepidium virginicum*), rib grass (*Plantago lanceolata*), milkweed (*Asclepias syriaca*), dandelion (*Taraxacum officinale*), burr grass (*Cenchrus tribuloides*), corn cockle (*Lychnis githago*), velvet leaf (*Abutilon avicennæ*), thistle (*Cnicus lanceolatus*), chickweed (*Stellaria media*), black mustard (*Brassica nigra*). Of the 265 species of New Jersey weeds 135 are native and 130 have been introduced from abroad; but of the 20 worst weeds only 4 are native.

THE CREEPING CROWFOOT.—Dr. Stewart, Peoria, Illinois, remarks that we should hardly have classed *Ranunculus repens*, as an introduced species: "It is the most common indigenous species all over the West,"—but Dr. Gray, in his revision of the genus, in the Proceedings of the American Academy a few years before his death, expressed a doubt whether the American forms should be regarded as identical with the European. Still our correspondent's point is well taken so far as correcting the remark that there is an indigenous form as closely related to the one figured, as are the foreign introductions noted.

ROMAN WORM WOOD.—In the eastern States the *Ambrosia artemisiæfolia* is universally known as Rag Weed. The "*Country Gentleman*" notes that its western common name is generally Roman Worm Wood.

A CREEPING CYCLAMEN.—Modern Botany teaches that the various species of plants now existing, have been born—or, in the language of science—have been evolved from pre-existing forms. This granted, there come in two philosophical schools,—one believing that the changes are brought about by imperceptible and almost inconceivably slow modifications through long ages,—the other, that the changes are not to any great extent due to external influences operating through centuries, but come suddenly through the operation of laws yet wholly unknown.

The senior conductor favors, if indeed he is not the author by his Troy paper before the American Association for the Advancement of Science years ago, of the latter belief. A stronger illustration of the suddenness with which new characters may appear is afforded by a *Cyclamen Persicum* which a lady of Philadelphia, Miss Sanford, sends to MEEHANS' MONTHLY. Possibly no one before saw any tendency in this plant to send out runners like a strawberry,—yet here it is! What one plant can do, all may do. The force in this direction is simply weak,—a little greater force in this direction, and we should have a running Cyclamen all the time. (See p. 60).

SWAMP APPLES.—Frank N. Tillinghast, Greenport, Suffolk Co., N. Y., says:—

"Reading of the *Azalea nudiflora* in the February number of the MONTHLY, brought to mind the 'swamp apples' of my school-boy days. Doubtless many of the readers of the MONTHLY remember the pleasure they took, while children, in hunting the woods in quest of these curious excresences of the White Swamp. Honeysuckle, *Azalea viscosa*. They are abnormal fleshy growths, said to be transformations of the flowers, and are agreeable to the sharp appetite of the boys, being succulent, and sometimes rather sweetish to the taste."

EUPHORBIA HETEROPHYLLA.—A lady hands us a collection of dried plants found in bloom in Southern Florida in the first week in February, among which some of *Euphorbia heterophylla* are very instructive. The *Poinsetta pulcherrima*, universal in gardens, regarded by modern botanists as simply *Euphorbia pulcherrima*, is highly valued for its bright scarlet bracts. *Euphorbia heterophylla* has similar bracts, the most part being green. The leaves of the Poinsetta are somewhat "fiddle-shaped," and so are the leaves of the *E. heterophylla*, Modern science teaches that what we call species are only points in a line of development in which links have been dropped or not found. No one can compare these two species without being struck with the unity of plan on which these seemingly different species have been formed. In the Florida specimens some plants have such narrow leaves that some botanists have called the form *E. graminifolia*, other plants have the inferior leaves fiddle-shaped and this has been called *E. cyathophora*,—

EUPHORBIA HETEROPHYLLA.

while an entire leaved form has been referred to as the genuine *heterophylla*. These specimens show the good judgment of those who regard the forms as but variations of the same species; and possibly the species know as *Euphorbia cuphosperma*, *E. geniculata* and *E. dentata* which the writer has found as far north as Central Kansas, may be but outlying variations of one thing. The illustration is from a garden specimen. It has been introduced to cultivation in recent years, and has been especially encouraged by Johnson & Stokes, of Philadelphia. The common name used by this firm is "Mexican Fire Plant," or "Fire on the mountain."

GOODYERA PUBESCENS.—Nature is replete with compensations. A blind man once told the writer that though he supposed that he would like to see, he felt that he had been blessed with sources of enjoyment that would never have been given to him, could he have seen as others saw.

Many a lady with features plain and homely, has excited love and life-long admiration by the beauty of character, while beauty in its physical sense, has failed of enduring charms.

What is uglier than a cactus, but how beautifully has nature adorned it with flowers! Orchids' flowers are usually showy, but how homely are the plants that bear them! The *Goodyera pubescens*, the well-known rattlesnake plantain, with its greenish-white flowers, would hardly be noticed; but with its pretty white-veined leaves, hundreds not botanists, admire it.

In the days when it was customary to draw rules of moral conduct from floral life, what a fine text would have been found in our modest American plant!

GOODYERA PUBESCENS.—RATTLESNAKE PLANTAIN

THE MISTLETOE.—A Georgia correspondent says, "Does Mistletoe sap the vitality of trees on which it grows? On an old plantation in Georgia several large chestnut trees are dead, which used to bear vigorous growths of Mistletoe." The general impression is that the parasite is inimical to the health of trees. It gets its entire support from the crude sap, and takes what should go to the support of its host. We have never known, however, trees to be entirely destroyed by it.

But Bonnier, a good French botanist, and acute observer, finds that the green leaves elaborate sap, and are as much use to the tree as its own leaves would be.

A PROLIFIC CHESTNUT BUR.—Mr. John K. Goodrich, of Waterbury, Connecticut, found a chestnut bur last fall with seven fully matured chestnuts therein. Facts like these have an important bearing on systematic botany, as showing relationships to other plants not otherwise suspected, and are always thankfully received.

THE MUSK PLANT.—This well-known plant of our gardens, is one of the interesting wild-flowers which the visitor to the big tree groves finds under the mammoth denizens of the forest. Some one has discovered a double-flowered one, and it is among the novelties of the season, advertised by florists. It is *Mimulus moschatus*.

ALMONDS.—The almond is simply a peach with a leathery coat instead of the juicy flesh of the peach. This shell splits open when the nut is ripe. Those who don't know, get varieties that do not open, and then find "almond culture not profitable." It takes brains to run even so simple an affair as an almond orchard.

THE MISTLETOE IN TEXAS.—A correspondent at Albany, Texas, under date of December 13th, states that one of the most beautiful of the wild flower features of that part of the country at that time, was the Mistletoe, with its pearly-white berries. He thinks that there is nothing equal to it in beauty, even among the gay flowers of the summer season in that part of the world.

THE SYCAMORE of scripture is a fig—*Ficus sycamorus*. The sycamore of England is a maple—*Acer pseudo-platanus*. The sycamore of America is the buttonwood—*Platanus occidentalis*. In the old world our buttonwood would be a "Plane tree."

GENERAL GARDENING.

A SPRING GARDEN.

And flowery meadows soft and green
In living emerald met the light,
And o'er their dewy turf were seen,
In countless gems, the drops of night;
And gardens, full of freshest flowers,
Unfurled the pictured veil of Spring.
—PERCIVAL.

CUTTING OFF FADED FLOWERS FROM ROSES:—We heard some one last summer speaking slightingly of the horticultural knowledge of a lady, who, with scissors and basket, was cutting off the faded flowers of roses. The objector was one, too, who was supposed to know something of practical gardening. He couldn't see what was the use of such waste work; in his opinion the roses would grow and thrive just as well if all that work had not been undertaken. It so happens that this objector was wrong. It is a good practice to cut off the flowers of roses as they fade. There is nothing exhausts plants more than the production of seed, and when flowers are left to go to seed, it is just so much drawn from the vigor of the plant. In the case of roses, the class known as hybrid perpetuals, or ever-blooming roses, rarely flower in the fall freely, unless the flowers are cut off as the petals fade; the new flowers of autumn have to be produced from young wood, which starts from the spring flowering branch, and the sooner the faded flowers are cut away, the sooner these buds proceed to produce blossoms. In fact, it is only where the faded rose blossoms are cut off as fast as they fade, that the plants flower very freely again in the autumn of the year.

APPLE CULTURE IN NEVADA.—A correspondent who has probably the oldest apple orchard in Nevada, writes from Reno county enthusiastically of the prospects of apple culture there. No finer fruit is produced in any part of the world. Ben Davis is magnificent in appearance, though deficient in quality. Rome Beauty is first-class, but a rather slow grower. York Imperial comes nearer to being a perfectly "all round" variety than any other kind.

HERBACEOUS PLANTS.—Complant is very often made that foxgloves, and other herbaceous plants, are very apt to die away after flowering, and they are regarded, therefore, rather as biennials than perennials. The fact is, that even annuals can be made perennials if they are only prevented from going to seed. It is the production of seed that exhausts life, and is always a strain on the vital powers of any plant. There is no annual but may be made to last for many years, if only the flowers are pinched off before they fade, and before they have an opportunity of forming seeds. This hint can be carried into the cultivation of herbaceous plants. If the flower stalks of the foxglove, or other plants, are cut off when the flowers fade, there will be no difficulty in getting them to last for a number of years,—and those who wish to increase perennial plants rapidly, do not let them flower at all. In cases where seed is required, of course one or more plants can be suffered to go to seed, but this is not always the case with lovers of flowers, who only want a few plants for their gardens.

ABIES PINSAPO.—Mr. Falconer remarks: "Apropos of your note, page 26, I will say there are two pretty specimens, 15 or 16 years old, growing in Mr. Dana's garden here on Long Island. They occupy a warm, well-sheltered part, and are thinly shaded by neighboring large oak trees, but otherwise they get no protection from the weather, summer or winter. At the same time I am satisfied that this beautiful fir tree is not reliably hardy on Long Island."

THE CAPULI CHERRY.—The wild cherry of the United States, *Prunus* or *Cerasus serotina*, changes its character as it gets into Mexico, and becomes, so to speak, another species, known as *Prunus capuli*. In Mexico the fruits are sold in the market under the name of Capulinos. In the *Revue Horticole* for February 1 are figures showing the flowers and fruit.

A LARGE ROSE.—*Rose Florent Paurvels.* This enormous flower, over seven inches across in its natural condition and as red as blood, is figured in *Rosen-Zeiting* for January 7th. It is a hybrid tea, raised by Soupert & Notting in 1880.

CALANCHOE PINNATA.—A correspondent sends from Florida a plant which he says is becoming more common from year to year, in sandy soil, which does not flower, but which increases by buds which form in the notches of the leaves. When the leaves fall on the ground these buds grow. It is a plant very common in farm-house gardens and windows all over America, and sometimes blooms quite prettily when thus grown. It is remarkable for the

CALANCHOE PINNATA.

size of its calyx, which is of a greenish-purple, and nearly as interesting as the flowers.

It has been extensively grown as *Bryophyllum calycinum*, the first name referring to the leaf-growth, and the last to this pretty calyx; but it was named earlier by Persoon *Calanchoe pinnata*. Its original home is the Molucca Islands.

LYCIUM CHINENSE.—This, the well known matrimony vine of old gardens, has its young leaves gathered and eaten as greens in Japan. According to a correspondent of *American Gardening*, there are two forms in Japan—one spineless, and the other armed.

JAPAN IVY.—A correspondent, from Madison, Wis., desires to know the origin of *Ampelopsis Veitchii*. It may be stated that this is a native of Japan, growing in the woods there the same as our Virginia creeper grows with us,—both belonging to the same genus. It has been known for many years to botanists as *Ampelopsis cuspidata*. When it was first introduced in a living state from Japan, by Mr. Veitch, of London, the leaves were trifoliate, and on this ground supposed to be a new species, and named *Ampelopsis Veitchii*. It is now, however, well-known that single leaves and trifoliate leaves are merely conditions of the same plant. When, however, a name gets once established among horticulturists, as *Ampelopsis Veitchii* is, it is impossible to change it, so that it continues to go by this name. It is found to be one of the most valuable of ornamental vines, attaching itself readily to walls, or fences, or trees, without support, and thriving over a very wide extent of territory. There is scarcely, in fact, a state north, east, south or west, in which the plant will not thrive admirably.

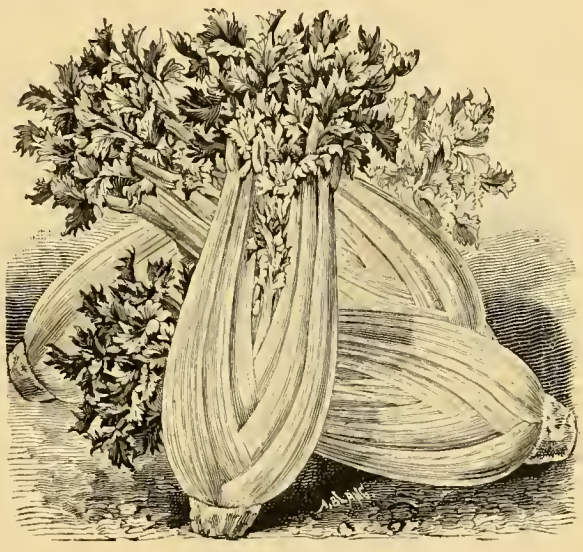
BIRD'S FOOT VIOLET.—This species of violet, known botanically as *Viola pedata*, is perhaps one of the handsomest of all for garden culture. It thrives very well in flower borders, besides this it seems capable of furnishing a number of beautiful forms. There is indeed no reason why, with a little care, as many varieties as the pansy has furnished might not be obtained from it. We have seen in wild places occasionally, some forms entirely white, and some rose color. There are forms which look like pansies, having the two upper petals dark crimson, while the three lower ones are of the normal violet blue. We think also, from tendencies that we have seen in some of the wild flowers of this species that double kinds might be obtained with a little care in selection. Certainly it is well worthy of a place in any flower garden.

MATRIMONY VINE.—Prof. C. S. Sargent has discovered that the common Matrimony Vine of our old gardens and nursery catalogues as *Lycium barbarum* is not that species, but *Lycium Chinense*. It does not appear that the European form is under cultivation.

IMPROVEMENT OF CELERY.—The interest taken in the subject of the improvement of our garden vegetables since the matter was first broached in MEEHANS' MONTHLY, leads to the desirability of closer attention to the improvement of celery. On the tables of the most fastidious, and often at dinner parties of the fashionable, miserable stuff is often presented, little superior to the original wildlings in the salt marshes of Britain. The proper line of development is to lessen the amount of green-blade surface, and at the expense of the blades enlarge the leaf-stalks,—and again to exchange the natural bitterness for the nutty flavor we find in the best kinds. Some think that blanching is all that is required to remove bitterness,—but often celery entirely white will have a sub-acrid taste. There should be a natural tendency in the plant itself to mollify its natural sharpness, and not that the plant should be wholly dependent on the blanching process for this. Those kinds which have a tendency to exuberant leafy foliage, seldom expand widely the leaf stalks. Those who desire to select from seedlings, with the design to improve, should note this fact. To illustrate our meaning, we take from Mr. Bridgeman's catalogue, an illustration of a kind known round New York as Perfection Heartwell. The leaf stalks have become spread out into broad succulent plates, while the proportion of green leaf blade is particularly small. This was raised, as we are informed, by Messrs. Thorburn & Co., in 1882, from a short stocky form known as "Half Dwarf"—a kind that had already had its leaf surface considerably reduced. In the vicinity of Boston, some years ago, there was a similar stocky, thick-set kind, popularly known as Boston Market, but as this was now over a quarter of a century ago, no doubt some greater improvement has been made by this time.

SHADING THE SOIL.—It is a matter of common knowledge that the conductor of this magazine has always contended for the shading of the soil from the hot sun, as one of the essentials to good culture. Soil that is entirely bare of vegetation will often be found under a thermometer to rise as high as 90°, or even higher, in hot summer weather. This is not favorable to healthy vegetation; leaves and branches do not mind heat, but roots love comparative coolness. Prof. Fernow, in a recent address before the Kansas State Board of Agriculture, laid great emphasis on the value of shading the ground for forest trees. It is as much, it would appear, an element in good forestry to have shaded ground, as in fruit culture. We have never seen it so well emphasized as by Prof. Fernow in this address.

MAGNOLIA CORDATA.—Mr. Falconer suggests—"Your note, page 20, regarding *M. Frazeri*, 'not being found very often in a wild state,' prompts me to ask: Is *Magnolia cordata* now known in a wild state?"



IMPROVEMENT OF CELERY.

[Prof. C. S. Sargent, the late Dr. Asa Gray, and others, have reason to believe that *Magnolia cordata* can be defined so as to be worth distinguishing from *Magnolia acuminata*. In "Michaux's Trees of North America" *M. acuminata* is painted with pale blue flowers,—but nurserymen who have chances of seeing plants flower from many districts, find these have flowers varying through many shades to deep yellow, and the leaves also vary to as nearly or quite a cordate condition. For this reason some believe the *M. cordata* is but an outlying form of *M. acuminata*, and if so, only isolated specimens here and there are likely to be discovered].

PLUMBAGO LARPENTÆ.—The Dingee-Conard Company are doing good service by bringing into prominence as a hardy herbaceous plant, *Plumbago Larpentæ*, which was introduced from China many years ago by Lady Larpent, but has been "coddled" as a pot plant for so many years that its great beauty is but little known.

It was found growing among the mortar in the great wall of China, and hence would naturally prefer a situation where the soil is somewhat dry. In the Germantown nurseries it seems to do well in the general garden border. Like the Chrysanthemum it should have a covering of dry leaves in the winter time, or it is apt to get winter killed.

PLUMBAGO LARPENTÆ.
Flowers Bright Purple.

ROSES BUDDED ON PEACH TREES.—The newspapers say that in the garden of Judge A. R. Johnson, of Mississippi, roses have been successfully grafted on the peach tree, and a correspondent asks us if we believe it? We have never tried it, and cannot say from our own experience. We should only observe that there is very little more difference between a rose and a peach than there is between the chestnut and the oak, and the quince and the pear, or between the privet and the lilac, and yet all these are grafted together. It is not a matter for the scientific opinion of the editor, but for the actual experience of those who want to know. It is so easily tried that we should think the question could soon be solved.

LONICERA FRAGRANTISSIMA AND STANDISHII.—Mr. W. F. Bassett, Hammonton, N. J:—"In your note on these two honeysuckles you say there is but a slight variation between the two. So far as the individual flowers are concerned, this is true, but not in other respects. I have had both for some twelve or fifteen years and *L. Standishii* is an upright grower and often blooms here in February, and although it continues in bloom for several weeks, the flowers all open much nearer at one time than in *L. fragrantissima*, and the latter is later in commencing to bloom and then continues to produce fresh flowers for two months or more. Its style of growth is quite different, being stronger. The new shoots grow in curves like a black-cap raspberry and often root where the ends reach the ground. It is also much nearer an evergreen than *Standishii*. Some of the shoots often hold their leaves green and fresh all winter. Both are desirable shrubs on account of their fragrance and the fact that they bloom so very early. Neither is of much value for cutting."

PRUNING STREET TREES. M. appropriately remarks:

"Why do people persist in hacking off the tops of maple trees? Hardly a day goes past but one can see this practice of 'pruning.'

"Besides being harmful to the tree it is unnecessary. When a maple tree has grown too large or too bushy, cut out the needless or unshapely limb close to the trunk, and paint the wound to prevent decay while the bark is growing.

"No pruning can make a maple tree more beautiful than its natural growth. If a tree is likely to grow too tall, others near it should be cut away. The natural desire of a tree is to spread laterally if it has the space to do so."

LEAVES OF THE VICTORIA LILY.—It is stated, in a work of great authority, that the leaves of the Victoria Regia do not turn up at the edges as noted in the illustration we gave recently, except when the plant is growing in bright light. It is said that, in the shade, the leaves are always flat on the surface of the water, without the turned up edge. Does any one know whether this fact has been well authenticated?

PARIS GREEN.—Although it is now nearly 25 years since it was announced in the *Gardner's Monthly*, we believe for the first time anywhere, that Paris green was a perfect and effectual remedy to protect the potato from the ravages of the Colorado beetle, it is only just now that the matter is receiving serious attention in the old world. It is a singular characteristic of the two nations that, while in our country we are ever on the search for any new fact of value in the arts and sciences, and it is not many months before any announcement of probable value is made in the old world before it becomes commonly known in this, it should take so long for people in the old world to learn anything from the experiences of our country. To-day there is scarcely a household among our millions of people where the knowledge of the value of Paris green as an insecticide is not known,—and yet it is safe to say that not one in a thousand in the old world has yet heard of it.

LACTUCA SCARIOLA.—This foreign weed, a kind of lettuce, is becoming abundant around the Gettysburg battle field. It is a very interesting plant from the fact that the leaves are vertical, standing on edge instead of being horizontal. Dr. Englemann once supposed that they were polar, as well as vertical, that is to say, the edges of the leaves being directed north and south, similar to those of the compass plant. A careful examination of these at Gettysburg shows that though numbers are polar there is a sufficient number having their edges in other directions to warrant one in hesitating about calling it a true polar leaf plant.

OPUNTIA PROLIFERA.—This in the vicinity of San Diego, California, according to *Garden and Forest*, is known as "cholla." Challos valley received its name from the abundance of this plant. It grows there from three to ten feet and has stems two, four, or even six or seven inches in diameter. It has never been utilized as some species have,—the thorns being too truly protective. The flowers there are about one inch or one and a half inches in diameter. Brandegee says there is a spineless variety, though Mr. Orcutt thinks that may be a distinct species.

FRUITS AND VEGETABLES.

ROOTS OF CALADIUM ESCULENTUM.—Mrs. Willis tells the *Georgia Citizen*:

"Under the name of tanyah the tubers of the caladium are sold in our markets during several months of the year, and resemble somewhat large, rough-skinned Irish potatoes, except they are uniformly round, or roundish. Like the potato they are boiled, mashed and dressed with butter, pepper and salt. The favorite way, however, is to slice them while hot into a warm dish, season with salt and pepper, and serve with a sauce of drawn butter and chopped hard boiled egg. They are also made into small pates and fried like potato cakes. The color when cooked is either of a pale lilac, or a delicate flesh tint. The national dish of the Hawaiians, pau, or poi, is made of the roasted tanyahs pounded up with water and certain ingredients into a sort of paste. Dr. Porcher tells us that the juice of the leaf makes an indelible dark brown dye, and that with nitrate of silver, or sulphate of copper, or alum, it will produce an indelible marking ink."

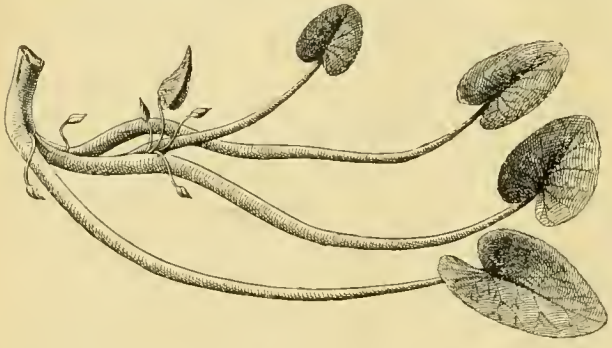
In the Northern States where the plant is so much appreciated in summer garden adornment, these good uses of the favorite plant will be appreciated.

QUINCES.—The Van Deman and Santa Rosa.—Mr. Luther Burbank, of Santa Rosa, California, says:—

"Van Deman is larger than any known Quince, both are unequaled in size, early bearing, productiveness, beauty of form and color, and the quality of the fruit is such that they are, when ripe, tender and good to eat uncooked like Apples, both cook as quickly as Apples and are delicious whether cooked like the old fashioned Quinces, or baked like Apples."

THE FLAVOR OF STRAWBERRIES.—It is said that it is necessary to be continually raising new varieties of strawberries, because of the degeneracy of older kinds. Unfortunately the raising from these degenerate kinds does not seem to improve the race. With the exception of occasional instances market strawberries are of little more value either in size or quality than wild ones. A line of improvement is certainly desirable by taking some first class healthy variety to breed from.

PRESERVATION OF THE APPLE FROM THE CODLING MOTH.—Since the knowledge of the use of Paris green against insects was first announced in the *Gardener's Monthly* many years ago, it is safe to say that it has been millions of dollars in value to American fruit and vegetable culture. In the protection of the potato against the Colorado beetle alone, many thousands of dollars must have been saved. It has often seemed to us that if the *Gardener's Monthly* had never made known any other valuable fact than this one alone, "it deserved well of its country," as the politicians say. During recent years Paris Green has been of especial value in preserving the apple from the attack of the codling moth, which has been the greatest enemy to profitable apple growing. About one pound of Paris green is used to 300 gallons of water, and this sprayed over the



CREEPING CYCLAMEN.—SEE PAGE 53.

apple tree, when the fruit is of about the size of marbles, and then a second time when grass harvest or hay time commences. It must not be done later, or perhaps a sufficient amount of the copper poison might get into the calyx, or stem depression, to be injurious. So far, however, we have never heard of a single case where any one suffered the slightest injury from the use of apples that had been preserved from the insects in this way.

LARGE STRAWBERRIES.—We notice, in different newspapers, controversies as to what is the largest size that a strawberry has been known to reach. A Californian in Yuba City claims to have grown the largest so far recorded. He says it is 5½ inches around one way, and 6½ the other. We believe, however, that we have seen some somewhat larger than this.

CELERY CULTURE.—In the old world almost every one is an amateur gardener,—and unless they could grow their fruits or vegetables superior to what they could find in the market they would feel very badly about it. Celery culture is especially a point with these amateurs. They find by experience that a great deal of the success in growing fine vegetables, depends on getting very healthy plants to start with. They do not sow their celery seed bed, and then draw out the plants for their final plantations, as so many do with us. Some of our growers do a little better than this, however, by transplanting their celery plants once before setting them out: but the enthusiastic English amateur is not even satisfied with this, but puts his plants as soon as they can be safely handled each into a small pot, so as to get them stocky, and well established, before setting them out in the open ground. Large numbers of these small growers, who have only room for two or three dozen plants, will have these plants, which they first raise in boxes in the windows, all ready to re-pot and set out in August. It is amazing what enormously large and succulent stalks of celery can be raised by a little extra care in this way.

GROWING FILBERTS.—Mr. W. Falconer says: "We have a nice clump of them here (Long Island) and they do very well. They are in rather a sheltered part of the grounds in a clearing near the margin of a piece of woods, hence are sheltered a little from warm sunshine at any period of the year. But, it is as you say, to have them set well, a good many of them should be planted together. And I should advise, don't plant them too close, but give them plenty room to grow and form hard wood; and avoid severe pruning, as it produces too many sappy, fruitless shoots. About the first of September our boys have quite a fondness for weeding and cleaning about that hazel patch."

TEMPERATURE FOR MUSHROOMS.—Mr. Wm. Falconer, who is one of the most successful raisers of mushrooms in America, finds that the best temperature in the mushroom house is between 50° and 60°, the nearer 56° the better.

Gooseberry Mildew, (page 28).—Mr. Falconer obliges our readers by the following note:—

"Mulching the ground under the bushes by retaining the moisture in the ground and keeping the earth cool, may act as a partial preventive against mildew, but I can assure you it is far from a complete preventive. By the way, do you remember, a good many years ago, what a fuss was made about budding the gooseberry on the Missouri currant stock, as a complete preventive of mildew? My experience with it was, that it acted as an unfailing invitation to the fungus pest to come and stay. But locality has a good deal to do with mildew on gooseberry bushes. At Boston my friend Mr. Benjamin Smith grows the big English gooseberries with excellent success, and by summer mulching, cow-dung and liberal cultivation, avoids the mildew; but here at Glen Cove, equally well cared for, they begin to mildew about the end of May. At Jamaica, a few miles from here, however, I am informed that a farmer has got a large fruited variety that grows and ripens well with him, and that mildew does not touch it."

Mr. Falconer's note is of great educational value. It well illustrates what this magazine is endeavoring to teach, that the lower classes of plant organisms require a much nicer combination of conditions in order to germinate and spread than more highly organized plants. In one locality, an English gooseberry free from mildew, is announced as a "mildew proof" variety, but the experienced culturist would rather say the nice conditions necessary for the germination of the mildew did not happen to exist.

Propagating the Currant.—Mr. W. C. Strong, Waban, Mass., says: "If you will credit me with disinterested benevolence, I will confess one of my numerous failures, for the benefit of my fellow craftsmen. Having the reputation of trying a great many experiments, it is to be expected that we have some slips. These slips are often as instructive as successes, if they could only be brought to light. As an example, we had a new currant, which we wished to propagate rapidly. It occurred to me that it could be done with a single eye, as is so common and so successful with the grape under glass. Why not? Certainly the currant makes roots more readily than the grape, and it will be an easy matter to give all the conditions for a certain and vigorous growth. So we made the single eyes from well-ripened wood in September and planted them in flats, in the most approved manner and set them in a cool room, to give them a gradual start. In about six weeks they were nicely calloused and ready for a gentle bottom heat, which was duly given. But instead of the expected dark green foliage which we looked for, the callous began to change to a dull color, the eyes refused to start, and in a few weeks it became evident that the experiment was a complete failure. What was the cause? It is possible that there was some fault in management, though I can hardly think it. My opinion is that there is not enough vitality stored in the wood of a single eye of a currant to push the eye and develop a healthy plant. Of course our experiment does not prove this. Other treatment might possibly succeed—it does succeed with the grape. Why not with the currant? As the currant is an abundant producer of wood, and as a cutting from six inches to a foot in length does undoubtedly give a store of available vitality this single-eyed question may not be of much practical value. But, for one, I propose to make trial again, to determine what can't as well as what can be done."

The Earliest Peach.—Much controversy has been going on in regard to the earliest peach of any special good character. Hale's Early is still the most popular with our people. In England where they grow peaches under glass, and have a good opportunity of judging of the comparative earliness of fruits, it is found that the Amsden June is several days earlier than the Hale's Early; and, so far as growing them in that way is concerned, it is the more popular of the two. It is unfortunate that all the very early peaches are rather small. The line of improvement in this direction of early peaches should be to get them of larger size.

Plum, Coe's Golden Drop.—It is stated in the "California Fruit Grower" that this variety of plum is being circulated in the West under the name of Silver Prune.

BIOGRAPHY AND LITERATURE.

ORIGIN OF THE ROSE.

Tho' perfect Virtue shuns the World's Applause,
And modestly to secret Shades withdraws,
Rich in itself, with Ornaments Divine,
The juster Gods oft call it out to shine.
Or if a while they suffer it to lie
Unseen in its belov'd Obscurity,
'Tis but the more to brighten its Renown,
And on its honored Brows to fix the Crown.

Translation in 1706, from the French of Louis Liger D'Auxerre.

SERENO WATSON.—The death of Dr. Sereno Watson, which occurred at Cambridge, Mass., on the 9th of March, is possibly the greatest loss to botanical science since the decease of Drs. Torrey and Gray, to the latter of whom he succeeded as Curator of the Harvard Herbarium. One of Dr. Gray's fondest wishes was that he might be spared to prepare a complete Flora of North America,—but the immense number of new plants, coming in as the territory became better explored, kept back the work which it was hoped Dr. Watson might complete,—but still the task remains unfinished. Dr. Watson caught the tropical fever a few years ago, during a trip to Central America, and weakened much his robust frame. From this he has never been a strong man. Some time since La Grippe attacked him, and after a brave struggle that astonished his friends, had to succumb.

He was born at East Windsor Hill, Connecticut, on the 1st of December, 1826, and graduated at Yale in 1847. Though a profound botanist, and with eminent scholastic acquirements, his retiring habits kept him comparatively unknown to his fellow botanists. But he became attached to Clarence King's geological exploration of the 40th parallel, which started across the continent from California in the summer of 1867. Prof. W. W. Bailey was the botanist of the expedition, but during the following winter his health breaking down he had to return and Mr. Watson was given in charge. The admirable manner in which the botany of the expedition was worked up was a complete surprise to the older leaders in botany, and led Dr. Torrey to playfully ask him where he had hidden himself so long. He had the botany of California to work up for the survey of the State, which was a masterpiece of scientific work. Perhaps his most useful work was the "Bibliographical Index," issued in 1876, which helped botanists to tide over the appearance of the "Flora of North America" Dr. Gray was preparing, by giving the references to works in which plants had been described since the first attempt at a "Flora" by Torrey and Gray.

Every one is asking who can possibly succeed Dr. Watson in finishing the great national work on American flowers. It is especially, for many reasons, a critical time in the history of American botany. A level-headed leader in the science is one of its greatest needs,—and this makes the loss of Dr. Watson seem almost irreparable.

PROF. W. G. FARLOW; PRUNING TREES.—Dr. Farlow is Professor of Cryptogamic Botany at Harvard, and is thus brought face to face with the destructive nature of the lower order of fungi on plants. But he has recently given in an able address before the Massachusetts Horticultural Society, his opinion that injudicious pruning is responsible for much deleterious fungus action. He shows that all large wounds should be painted to preserve the wood from decay till it properly heals. He is especially severe on the destruction of street trees by the ignorant pruning of electric wire men, and the ignorance which allows trees to be horse eaten when a tree guard might protect them.

PACIFIC RURAL PRESS.—This San Francisco weekly has just celebrated its twenty-first year. It has cause to be proud, for in our estimation it is one of the best "all-round" weeklies in the world. Every California industry is fostered in its pages,—and agriculture, horticulture and popular botany especially so.

EDWARD ROSE—Early Cemeteries.—In olden times churchyards were the only burial places, and questions continually arise as to when and where the first modern cemetery in England, as distinct from the churchyard, originated. Kensal Green Cemetery, near London, founded in 1832, usually introduces the chapter in cemetery histories. In France, Pere La Chase was started in 1804. Mount Auburn, Boston, in 1831, was the first in America, followed by Laurel Hill, Philadelphia, in 1836. These are famous because they were grand efforts, seconded by wealthy people, whose deeds usually attract. But possibly the beginning of this great movement, though more modest, should be credited to Edward Rose, a merchant of London, who died in 1653. He bought a large tract of land in the vicinity of Barnes, a village near London, where the poor might have free burial, and in his will provided that he should be buried among these poor, leaving a sum of money the interest of which was to perpetually plant and care for roses on his grave. So far as we know, to Edward Rose of London, the modern cemetery should be credited.

AMERICAN WOODS.—During the Centennial Exhibition held in Philadelphia, the Japanese surprised Americans by exhibiting in book form thin segments of all the woods of Japan. No one understood how they were prepared. It was one of the best exhibits of forestry, in a small space, ever made. Since that time, Mr. Romeyn B. Hough, of Lowville, N. Y., has discovered the method, and has prepared American woods in exactly the same style for American students. No one interested in the woods of America could afford to be without this useful aid to the study. A first volume with all the commoner woods, appeared a couple of years ago. Just now a second volume, with woods which could not be obtained at that time, has been issued. We are glad to know that this novel enterprise, and one so useful, has been remarkably successful.

W. C. STRONG.—This gentleman was in early life a student of Daniel Webster, and not with Edward Everett as stated in a former note, —and it was Webster's influence in a great measure, that turned Mr. Strong's attention to horticulture, in which he has become so eminent.

JOSHUA LONGSTRETH, — NIGHT-BLOOMING CEREUS.—It is said that this famous horticulturist was the first to introduce and to bloom in America the old and original Night-blooming Cereus. We say old and original because a number of Night-blooming Cacti have received this name of late. The famous old fragrant species, *Cereus grandiflorus*, is still far ahead of all the others in beauty and fragrance. Joshua Longstreth was one of the founders of the Pennsylvania Horticultural Society. There were a few greenhouses around Philadelphia before his time, but the ones he built in the year 1809, at what is now 515 Arch street, were believed to be among the first of any great value in that city. He was passionately fond of flowers, a trait which is characteristic of most of the members of the Society of Friends living in the vicinity of Philadelphia.

DR. GEORGE ENGELMENN.—Although it is several years since the death of this distinguished botanist, we are only now coming to learn the great value of his work. Prof. Sargent has recently dedicated to him the second volume of his *Silva of North America*, and speaks especially of the remarkable fact that though one of the wisest and profoundest of the botanists who have studied the American Flora, he was able to do this successful work in the few hours snatched daily from a very large and successful medical practice.

ST. JOSEPH — THE GLASTONBURY HAWTHORN.—A variety of the Hawthorn under the above name, flowers in England at about Christmas time, or later if the weather is severe. A curious legend is connected with it. It is said that St. Joseph, of Arimathea, visited Great Britain in the year A. D. 63, built a church at Glastonbury, stuck his staff in the ground, which grew and produced this tree. The original tree was cut down in the time of the Puritans, but plants from it are still in existence.

JOHN ADAMS.—John Adams is said to have declared that he "should have preferred the pleasure of a garden to the dominion of the world,"—and yet it is well known he abandoned these pleasures for public positions very much inferior to that exalted grade. Exaggerated sentiment is no benefit to a good cause.

GENERAL NOTES.

Appreciation of the Magazine.—Great as the experience of the Senior conductor of this magazine has been, no enterprise with which he has been associated has been received with such a cordial welcome as Meehans' Monthly. What is the more grateful is the fact that this appreciation grows from month to month. A prominent Geneva gentleman writes under date of Feb. 29th : "The March number I have already read with avidity. I am growing more and more in love with it. I find as each month approaches, I watch the mail for its receipt." In the same morning's mail an eminent botanist says : "I am much pleased with the magazine, and especially with the interesting account of the Killarney Fern in the March number. I believe this fern has been found in past times in England and Wales, though now rarely met with." A prominent New York artist kindly says : "I caught a glimpse of your magazine in the hands of Mr. S.———. I want to see more of it. It is one of the prettiest magazines of the year." Many similar kind expressions from a single mail delivery are most gratifying. And they come through almost all.

But the most gratifying tributes come in the shape of criticisms. They show that the people think they have something so near perfection that it is worth while to try to have it absolutely to. It is too much to expect, but we shall try. A noted Delaware botanist, himself an author, notes on page 83 Decr. No., "where" should have been "were," and on page 96, the word "be" should have been before "Rudbeckia." In January number, under the cut it is "Linodendron" instead of "Liriodendron." Again a correspondent whose letter is in the same mail's delivery notes "the name of the great Persian poet is Omar Khaiyan, not Omar Kaizan." Again a botanical friend observes "You write *Erigeron bellidifolium*, it should be *bellidifolius*. Gray's 'Manual' up to the 5th edition, and American authors generally did write it in the neuter form '*um*.' I observed that Bentham used the masculine form '*us*,' and called Dr. Gray's attention to it. He replied '*us*,' and changed it in the 6th edition."

It is needless to say that these criticisms are as welcome as the unmeasured praise of others, —they attest the great interest felt by all classes in the magazine, which is very encouraging to the proprietors of the great enterprise.

It has taken the backing of strong governments or of princely patrons to illustrate the flora of other countries, and the publishers are proud to feel that American citizens can sustain the effort of a business firm to do, without any government aid, a similar good work for America.

It may be noted here that it is not deemed wise to take too great liberties with an author's manuscript, otherwise Omar Khayyam would have been the spelling of the name of the great Persian, according to a volume in the writer's library giving a translation of the "Rubaiyah" of this famous poet.

———

Knowledge of Flowers.—A correspondent says of a large city in the State of New York, that the florist who there makes the most money in his business is one who barely knows the difference between a rose and a lily. The correspondent says that she thinks—for the correspondent is a lady—that if one so ignorant could make a little money, how much more might he not be able to make could he read such a magazine as Meehans' Monthly?

———

The Next Plate.—The flowers that have recently been chromoed have been comparatively local to various parts of the United States. The next will be more cosmopolitan, if that word can be used as applied solely to the United States,—*Desmodium nudiflorum*. It is found over many parts of the Union, and is given as a plate for May, as being about in season then.

———

Photographs.—We are indebted to several correspondents for photo's, which are much appreciated.

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DESMODIUM NUDIFLORUM.

NAKED TICK-TREFOIL

NATURAL ORDER LEGUMINOSÆ.

DESMODIUM NUDIFLORUM, De Candolle.—Stem six to twelve inches high; leaves all crowded at the summit of the sterile stem; leaflets two to four or five inches long, obliquely ovate, acute; common petioles two to six inches in length; panicle on a tall and mostly naked scape; racemes slender, on a scape-like peduncle eighteen inches to three feet long, which proceeds from near the root, and is mostly decumbent at the base, becoming nearly upright at a little distance, and appearing like a distinct plant, sometimes bearing one to two trifoliate leaves; joints of the legume usually three or four, somewhat triangular, slightly connected. (Darlington's *Flora Cestrica*. See also Gray's *Manual of the Botany of the Northern United States*, Chapman's *Flora of the Southern United States*, and Wood's *Class-Book of Botany*.)

The plant here illustrated fills a very important place in American wild scenery; but it is seldom referred to by writers on American wild flowers, though it is a common plant in comparison with many that have attracted more general attention. It may be that this neglect of a very pretty plant has arisen because of its flowering late in summer when few but ardent botanists go out collecting. If it had been a spring flower its praises would have been better sung. Another fact against its popularity is that it seldom thrusts itself into cultivated circles. As the forests are cleared it disappears. It is only in the wildest woods that it seems perfectly at home. As the Jesuit's fair penitent in "Magg Megone" said of her haunts, it is found chiefly

> "Amid the ancient solitude
> Of unshorn grass and waving wood,
> And waters glancing bright and fast."

In some of the old forests, where the woody undergrowth has been kept down by many years of dense shade, it often takes almost complete possession of the surface of the earth, and presents as thick and even a surface of foliage as a clover field. At other times it has to struggle to hold its own even in these comparatively dark places, where flowering plants in general have no desire to grow. Sometimes the "Collinson Flower," or "Joe-pie" weed, disputes with it for territory, and once in a while *Polygonum Virginianum* crowds it out. Often *Amphicarpæa monoica*, though growing and flowering best in lighter exposures, will seem to spread wonderfully in the shade, crowding out almost every thing that competes with it, when even our *Desmodium* has to give way. This war of vegetation offers a very interesting study. A few scattered plants, though strong, will be crowded out by numbers of a weaker class, just as in wars among the human race,—also as among the human race, the ability to take advantage of slight circumstances often decides the contest. In the case of this plant, a little variation in the moisture of the earth has a great influence on its success in securing the ground mainly for itself. In the drier regions it has difficulty in holding its own against many of the species named,—but in moister ones only the *Amphicarpæa* of those named is its successful competitor. When the timber is cleared off the sun-loving plants have a chance, and then the *Desmodium*, in its turn, is crowded out. Still, it must be confessed that its chief interest as a wild flower lies in its dense growth in the "ancient solitudes," especially when lightened by the numerous panicles of rosy flowers, for it refuses to be of any service to those who would gather a bunch of wild flowers wherewith to adorn their homes. The leaves and flowers wilt very soon after gathering, and even as they grow the petals soon fall.

Apart from its interest as an ingredient in wild scenery, it has many attractions for the more critical observer. The manner in which the stem grows under ground is well worthy of study. When the growth commences in the spring, it pushes a mere thread under the earth

about two inches beneath the surface for a distance often of several feet. Towards fall, when growth is about to cease a number of strong buds are formed at the apex, from which the growth next year takes its new start. When this season arrives, one of the buds nearer to the old growth throws up the flower stem, and some one further in advance, the leaf stem; while the terminal bud runs on as a thread to renew the features of the preceding year. So far as the examinations of the writer go, this is always the order in which the differing growth features occur. The flower scape, however, is not always naked. There are small buds scattered along it towards the base, as our artist has shown in the illustration, and these will sometimes advance so far as to produce fully formed leaves. It is not uncommon for close observers to find these slightly leafy scapes. It is less common to find the leaf stem bearing flowers. Indeed the writer has never seen a case, and knows of only one on record. In the "Entomologist and Botanist," 1870, page 384, Professor G. H. French is writing of the plants of Southern Illinois, and says, "Various species of *Desmodium* grow here in the woods and fields, several of which are worthy of notice. In one place I found a specimen of *Desmodium nudiflorum* having two scapes, one naked (the usual flowering scape), the other bearing about midway a tuft of leaflets." In other words, a panicle of flowers had been produced from the top of the usually barren scape. Eccentricities like these were once regarded as "monstrosities" and mere "sports of nature," glanced at perhaps as something curious, and then thrown away. In modern times they are the most welcome of all experiences. The student can see by our illustration that the bud which produces the flowering stem, and that which results in a barren stem are essentially the same. As we are assured flowers are morphologically but modified leaves, there must be some law operating within the plant deciding which shall produce leaves purely, and which shall produce them in the form of flowers. We also know that growth is not in one continuous stream, but in cycles with more or less of a rest between each effort. There is reason to believe that the accelerations or arrestations of these growth-cycles have an immense influence in deciding form,—and the least variation in intensity makes changes such as we see in these aberrations from normal types. Thus we may say in the case noted by Prof. French, that the growth-wave in the barren shoot was not completely arrested as usual after forming the leaves, and thus was nearly in the condition of the normal flowering scape. It is believed by some that these growth-waves are dependent in some degree on nutritive forces operating at the starting point of each wave of growth, but this need not be further discussed in this place.

The separation of the growth into one foliaceous stem, and one wholly floriferous, or "naked" so far as leaves are concerned, attracted the attention of the earliest botanists. Gronovius alluded to it as "*Hedysarum caule nudo*"—the naked stalked—and Clayton, "*Hedysarum caule aphyllo*,"—the Hedysarum without leaves on the scape. Linnæus usually made up his names from terms commonly used in connection with the plants, and we see here how *Hedysarum nudiflorum*, the name he gave the plant, was derived. All plants allied to this were known as *Hedysarum* in his time. De Candolle founded the genus *Desmodium* in a "Memoir on Leguminosæ," published in in 1825. Even when he made the separation, he ranged one hundred and thirty species under it, so that it became a genus of as much importance as the one from which it was derived.

Hedysarum is a very old name applied to some plants possessing great sweetness, and which indeed is the Greek signification of its botanical name. Some of them were famous for their sweetness, for Peter Kalm, one of the first botanists to explore our country, could think of nothing better to compare our sweet wild azalea with, than the odor of *Hedysarum*. Desmodium is also derived from two Greek words signifying "like a bond or chain," the name being suggested by the way in which the seed vessels are divided into chain-like links, as see our illustration.

Another interesting fact in connection with our species is that it is one of those plants, native equally to the Atlantic United States, and to Asia, Dr. Royle having found it in the Himalayan Mountains.

EXPLANATION OF THE PLATE.—1. Complete plant from near Philadelphia. 2. Enlarged flower, showing how completely the stamens are united round the pistil. 3. Immature seed vessel.

WILD FLOWERS AND NATURE.

THE CHESTNUT WOOD.

It was evening;
The sun looked through the wood of chestnut-trees,
And bronzed their rugged trunks, and lit their leaves,
Till, as they rustled on the bending boughs,
Each seemed a flake of gold.

—PERCIVAL.

REMEDY FOR POISONING BY THE RHUS, OR POISON VINE. Professor Maisch sends the following valuable note:—

"Since it became known in 1865 that the poisonous effects of poison vine are due to a volatile acid, treatment with alkalies or certain metallic compounds appeared to be clearly indicated; but the mode of application is sometimes of much importance. Not being susceptible to this poison, I had occasion to observe in several severe cases the excellent effect of the following application which I learned five years ago from a correspondence in *Popular Science*. Saturate a slice of loaf bread with water, cover one surface of the bread with finely scraped washing soda, apply this side to the affected part, and if the bread becomes dry, drop water on the outer side so as to keep it thoroughly moistened; remove this poultice in about twenty or thirty minutes, but if necessary it may be applied a second time in the course of a few hours."

DOUBLE FLOWERS.—Although the florists get the credit of introducing so many double flowers, a large number of them are first found wild; they are the handiwork of nature rather than of art. One of the prettiest of wild flowers is the *Campanula rotundifolia*, which is known as the Bluebell of Scotland, in some parts of the world and sometimes as Harebell although that name more properly belongs to the wild hyacinth of Europe. It is remarkable that that species of Campanula is found in northern regions almost all over the world. It is now said that a double variety of this has been found, and will soon be introduced into cultivation among the lovers of flowers in the old world.

THE POISONOUS SPECIES OF RHUS.—Mr. John M. Dunlop, Milwaukee, Wisconsin, writes:—

"The poisonous vines known as poison ivy, which you mention in your February number, are very common in Wisconsin. *Rhus toxicodendron* grows on the roadsides and on waste land everywhere. In the Fall, its leaves change to a bright bronze, and are quite attractive. Young ladies who gather them for ornamental purposes, find out their mistake only when it is too late. *Rhus radicans* is one of our finest climbing plants, and may be seen in great perfection in the grounds of St. Francis Seminary, near Milwaukee, where it is fifty feet high. It, also, is poisonous. *Rhus venenata*, the most poisonous of the family, grows in all swamps. When it is in bloom its pollen impregnates everything around it. Those who gather *Sphagnum* moss for gardening purposes, are great sufferers from it. *Rhus glabra* and *Rhus typhina* are neat small trees. *Rhus aromatica* grows wild in the western part of Wisconsin, and is also cultivated as an ornamental shrub. It is four feet high. The three varieties last mentioned are not poisonous. Should any of your readers be poisoned, I would advise painting the parts affected with Colodeon. Use a small brush. It will afford instant relief, as it shuts out the air. I can vouch for this cure as I have tried it." [See also note by Prof. Maisch, on remedies for poisonings. CONDUCTORS.]

YELLOW CEDAR.—In the make up of the forests of Alaska, the giant arbor vitæ, *Thuja gigantea*, plays a leading part. They make trunks further south 200 feet high and 6 to 8 feet in diameter. It is getting common to call it yellow cedar, though that name was originally given to the Nootka Sound cypress, *Thujopsis borealis*, which is still called yellow cedar in nurseries, and would be sent to any customer ordering under that name. The Nootka Sound cypress is, however, comparatively a rare plant, and is not often met with by travelers.

CORNUS FLORIDA—THE EARLY FLOWERING DOGWOOD.—It was not known until the writer of this paragraph made plain the fact, that the large white, petal-like productions, which go by the name of flower in this Dogwood, were only the bud scales, which had taken a renewed growth in the spring. The little scales covering the true flowers before are carried up with the renewed growth, and may generally be seen at the apex. These scales are not, therefore, bracts, as they are commonly described in botanical works, but have a character particularly their own. It is remarkable that a similar character is possessed by a Japanese plant, known as *Benthamia fragifera*, and the woods of Japan are brightened in early spring by the flowers of this plant precisely as are our woods by the flower of this Dogwood; indeed, there is very little difference between the two genera. In our Dogwood the fruit is made up of a number of separate red berries, as we call them, while these red berries in the Japan plant are all united into one solid bunch like a strawberry, from which is derived the *fragifera*, or "strawberry bearing." It is a good illustration of a point frequently made, that the differences between families in nature are very often accounted for by simply the growing together of parts in some cases, or the separation of other parts in others. This *Benthamia* is quite hardy in our part of the world; indeed, one of several years' growth produced its Dogwood-like flowers in our grounds the last spring.

YUCCA ANGUSTIFOLIA.—The Yucca is known in gardens as the Adam's Needle and Thread. The one usually so called is the *Yucca filamentosa*. The one on the plains is *Yucca angustifolia*. At one time it was looked upon as an enemy to the agriculturist; of late years it has been discovered to be rather a friend of man. It is used extensively in the manufacture of paper, but, under the name of soap weed it is now coming extensively into use. The roots are first washed and boiled, and a few other ingredients mixed, according to the fancy of the special maker. When the residue is dried out that it will solidify, it is melted into cakes of soap. It is now becoming so common as to be the only soap used over a large extent of territory.

POISONING BY KALMIA.—Standard works of reference contend that cattle cannot be poisoned by Kalmia, because analysis does not show any toxic property in the plants, but nevertheless, careful observers have insisted that the death which often follows from feeding on the leaves, must be from poisoning. The following valuable contribution from Prof. Maisch, of the Philadelphia College of Pharmacy, settles the matter in favor of the opinions of the practical men.

"In 1882 a poisonous principle, now known as Andromedotaxin, was isolated from the leaves of Andromeda japonica, by Professors Plugge and Eijkman, of Holland; and the same principle has since been shown to exist in *K. latifolia* and *K. angustifolia*. According to Dr. De Zaayer, the former contains only one twentieth per cent. of the poison; but this had previously been demonstrated to kill rabbits in doses of three milligrams, or, one twenty-second of a grain, and from these figures it will be seen that, probably, not a large quantity of Kalmia leaves would be poisonous to cattle. This deleterious compound appears to be of frequent occurrence in the leaves of ericaceæ, such as many rhododendrons, and some species of azalea, andromeda and monotropa. On the other hand its absence has been demonstrated from the species thus far examined of the following genera: Arbutus, Arctostaphylos, Chimaphila, Clethra, Epigæa, Erica, Gaultheria, Ledum, Oxydendron and Pyrola."

SAND SPURS.—This is the name given to the Mexican grass known to botanists as *Cenchrus tribuloides*. Americans, that is citizens of the United States, first made its acquaintance on the battle-field of Palo Alto, where they were quite as annoying to our soldiers' as the bullets of the Mexicans. The burr-like spikelets attached themselves to the soldiers' clothing, and in this way the plant was widely distributed on the conclusion of the Mexican War. It is now common in many parts of the Southern States, much to the annoyance of cultivators of the soil. The writer has found a solitary plant as far north as Philadelphia, growing near a woolen mill. Everybody should get familiar with it, if only to destroy it on its first appearance.

POETRY OF THE WOOD HONEYSUCKLE.—Michaux, in his *Flora of North America*, describes our Wood Honeysuckle as *Azalea periclymenoides*, or the Azalea resembling the English Honeysuckle, and in this he is followed by Pursh. There seems to have been no reason for this but a desire to carry into its botanical name some connection with its popular name of Honeysuckle. Modern botanists do not, however, place these proprieties before the rigid rule of priority, and so the older name of Linnæus, *Azalea nudiflora*, is now in universal use.

It is remarkable that so beautiful and so suggestive a plant should not have received more respect from the poets; but there is nothing the author can remember of any importance. Some few of the writers on emblematic poetry have sought to connect it with generous and devoted love; but this is an idea evidently borrowed from its older namesake, the Sweet Honeysuckle of Europe. Mrs. Embury gives a drawing and description of the true Wood Honeysuckle, and then gives a pathetic love story in illustration of this admirable human sentiment; but we find her, as she goes along, making her Honeysuckle twine over monuments, and up among trellises,—and it is probably from the overshadowing influence of the good old plant bearing the older name that ours has been so unfortunate.

JERUSALEM ARTICHOKE.—Errors stick wonderfully when they once get into print. A number of North American plants are stated by Ray's *Historia Plantarum*, to have come from Brazil, evidently by an error in the tickets of some Italian Herbarium The Jerusalem artichoke is one of these. There is little donbt our native *Helianthus doronocoides* is the wild parent of the Jerusalem artichoke. This has over and over again been presented, yet Brazil is still quoted, even by highly intelligent scientific papers—to wit, one now before us.

LARGE OAKS.—A Charleston lady writes, "As for large oaks, there is one about forty miles from the city, which is thirty-one feet in circumference near the ground and divides into five enormous branches, each of which would make a fine tree. The tips of the branches nearly touch the ground at about thirty yards from the trunk. It is a Live-oak."

PINUS PONDEROSA.—"Fruits and Flowers" states that this pine is known in the northern Pacific as the yellow pine. It refers to the remarkable variation which occurs among this species of pine in various parts of northern California; one form has thick, whitish yellow bark, divided into large, flat plates, and is considered the type form and yet it is more rare than the others. Another has handsome reddish-yellow brown bark, but with the same large and flat plates, much thinner than the other form; this is the most abundant one in southern Oregon; then there is one kind of the same pine which has rough black bark, and is more knotty and more or less scrubby in character than the other forms.

THE DWARF CALLA LILY.—SEE P. 73.

ERIGERON SPECIOSUM.—In a short botanical excursion around Fort Townsend, Washington, nothing could exceed the great beauty of the *Erigeron speciosum*, or as it is sometimes called *Stenactis*. When we speak of the great beauty of the *Asters*, as generally seen in our Eastern States, one may have a little, but a very imperfect idea of the great beauty of this particular species in wild flower scenery. The *Erigeron* is so closely related to *Aster*, that when we speak of the beauty of the *Aster*, in connection with American wild flowers, we may nearly take in *Erigeron* as well. A very large number of ray florets is the chief distinction between *Erigeron* and *Aster*.

THE AGE OF THE MAMMOTH TREES.—A correspondent inquires whether these celebrated Californian tree monsters are really two thousand years old or more, as represented in horticultural works. There is no doubt about their being of these great ages. Sections of the exterior have been cut into the wood, and the annual growths calculated accordingly, so the exact number of years to produce a half-inch has been definitely ascertained. Dividing half the diameter of a tree, and multiplying by these ascertained facts of annual growth, the result gives the ages as already given by those who have already pronounced them of great age. The annual rings in the one forming the pavilion floor have been counted and found over 1700.

AUSTRALIAN GUM TREES.—These are now becoming a frequent feature in Californian garden scenery. It is well to remember that there are about a hundred different species of the *Eucalyptus* in its native country. The one most numerously planted in California is the Blue Gum *Eucalyptus globulus*.

The world is indebted chiefly to Baron Von Mueller, of Melbourne, for the complete history of these trees.

THE MUSK PLANT.—The Musk plant is a native of the Pacific States, and those who have visited the famous mammoth trees in the Calaveras Grove, will remember that it forms a considerable portion of the forest flora. "The Garden and Forest" now states, that it has become naturalized in some portions of the Adirondacks, and also in the vicinity of Saratoga.

THE BEARDED LADY.—This is a popular name given to a labiate plant in California, namely, *Pogogyne nudiuscula*. It is an annual and considered rather rare, being found chiefly in the lower part of California. It is also called Wild Pennyroyal. The flower varies from white to rose color, and is very showy. It thrives best in partial shade.

A NEW SPECIES OF RUBUS.—"*Gartenflora*" announces that a new Rubus has been introduced into France, called *R. xanthocarpus*. It has golden fruit, and may be of some economic value. Dr. Regel finds that *R. cæsius* of Asia, is somewhat distinct from the well-known form, and he calls it *Rubus cæsius Turkestanica*.

LARGE FRONDS OF FERNS.—Although ferns are usually supposed to grow under harsh circumstances, and in places where they can get comparatively little food, many of them will sometimes show great nicety in the selection of locality by the size to which their fronds will grow. In the Southern States the common Polypody, growing on the dead bark of large trees in the depths of the forest, have often been found 15 inches in length. It is stated in an English periodical that in England they have been found as much as 24 inches. This fern has probably never been found with fronds of this length in America.

THE OX-EYE DAISY.—A correspondent of the *Pacific Rural Press* states that this plant, known botanically as *Leucanthemum vulgare*, very common as a weed in the Eastern States, has excellent medical powers. It seems to be especially useful in connection with liver diseases. Cattle will not eat the plant in its green condition, but the same author says that when dried cattle are very fond of the hay. There is evidently more value in it than its reputation as a weed has hitherto permitted.

THE MAYFLOWER.—Every locality has its own Mayflower. The Mayflower of England is the Hawthorn, the Mayflower of Massachusetts would be the *Epigæa repens*, the Mayflower of Pennsylvania would be the *Podophyllum*, the Mayflower of Mexico is a beautiful orchid, known in our greenhouses as *Laelia majalis*.

THE APPLE SCAB.—Professor Goff of the University of Wisconsin, identifies the little round dark, white outlined dots, so often disfiguring the surface of the apple, as a fungus called *Cladosporium dendriticum*, a rather hard name for familiar use.

ABRONIA UMBELLATA.—Mrs. K. P. S. Boyd, tells in *American Gardening*, that this beautiful and sweet smelling California wild flower, may be found in blossom any month in the year except January, on the sea-shore near San Francisco.

FORESTS OF WEST VIRGINIA.—Mr. A. D. Hopkins of the West Virginia agricultural experiment station, estimates that 800 square miles of the State are still covered by excellent Black spruce timber.

GENERAL GARDENING.

THE NIGHT-BLOOMING JASMINE IN PARADISE.

"——— many a perfume breathed
From plants that wake when others sleep;
From timid jasmine buds that keep
Their odour to themselves all day,
But when the sunlight dies away
Let the delicious secret out
To every breeze that roams about." —MOORE.

MIXED LAWN GRASSES.—A correspondent inquires whether there is any advantage over designated kinds of grass in using what is known as mixed lawn grasses. It is impossible for any person to tell what species of grass would make a good lawn in any one locality. The grass that will grow well on high, dry ground does not do well in low and moist places; others do best in shade, under trees; while others do better in the sun, out in the open. The advantage of the mixed grasses is, that the kind best adapted to any special location eventually succeeds and crowds out those which are less fitted for the situation. We have seen, for instance, the sheep fesque grass, which loves to grow in comparatively dry places, drive out every other grass that competed with it under the shade of trees where the ground was dry; on the other hand, the different kinds of Bent grass, in heavy clay, will crowd out the others. It is better, therefore, to sow these mixtures, as the kind best adapted will eventually take possession of the whole lawn.

LYNN PUBLIC PARK.—Lynn, Mass., has a park comprising 1650 acres of woodlands, hills, meadows and ponds, stretching in one continuous tract, easily available for the enjoyment of its citizens, as well as of citizens of neighboring counties. It is one of the most picturesque spots in New England, being a continuation of the Middlesex Fells. The wild country reaches the sea at Lynn. High Rock, Egg Rock, and Nahant form part of its rough ledges.

ZAUSCHNERIA CALIFORNICA.—The conductors cordially endorse the following from Mr. John W. Dunlop, of Milwaukee:—

"In the London *Journal of Horticulture* for February 4, 1892, I see an article by Mr. Deal, in which he speaks of our native plant, *Zauschneria Californica*, as useless, because it will not bloom or spread under his care. Had he studied its habits more closely he would not have been disappointed. There is no better rock plant and few are more beautiful. It grows in crevices of rocks with a very slight root-hold. On the face of the rocks on the south side of the American River, in Placer County, California, the plant thrives. The bank is a perfect blaze of bloom in summer. The flowers are fuchsia-like. Many of the lower plants are often covered with water, but this does not seem to hurt them. Do not make an outcast of this beautiful plant. With proper care it can be easily cultivated. It has bloomed with me in three inch pots."

A GREAT HORTICULTURAL EXHIBITION.—It was prophesied years ago, that great exhibitions, such as was inaugurated by the Centennial in Philadelphia, in our country, and by the Crystal Palace, in London many years ago, would soon wear out, and never be repeated. The fact is, they continued to grow in popularity from year to year. In 1893, there is to be a grand international exhibition of plants and fruits at Ghent, Belgium, and great efforts are being made to attract exhibitors from all parts of the world. American exhibitors are especially being sought for.

BLUE HYDRANGEA.—A correspondent inquires how to get Hydrangeas that usually produce rose-colored flowers to have blue ones. There is no way to accomplish this. Change of color in these flowers is wholly a vital process; frequently, branches on the same bush will have flowers of both colors, and this of itself shows that no application to the root would be effective.

PILOGYNE SUAVIS.—Mr. E. B. Tainter, Madison, Wisconsin, says:—"*Pilogyne suavis* is cultivated in a few cases here in Madison with success.

"We appreciate it for its vigorous growth, covering thick, fast and smooth with small, almost glossy green leaves, in appearance much like *Ampelopsis cuspidata*. In height it is more than equal to our one-story houses; and if it finds no support at the top of a verandah, often drops toward the ground and grows thick and bushy. It is propagated from long roots which we take inside in Winter, and plant out in Spring like Maderia vine.

"Will your excellent monthly informs us of its history? Where was it first known?"

[The recognized name of this plant according to the recent monograph of Cogniaux is *Melothria punctata*. It was first described by Thunberg in his Flora of the Cape of Good Hope, as *Bryonia punctata*—but as it was not a Bryony, succeeding authors have made for it, or referred it to at least nine other genera, among which it came to be *Pilogyne suavis*, but it seems now to be but a member of the Linnæan genus *Melothria*. It is remarkable that this species so sweet and so desirable as our correspondent notes, should have a close neighbor, now known as M. *fœtida*, so very disagreeable that one botanist named it *Trichosanthes fœtidissima*. By files of the *Gardener's Chronicle* it seems to have been introduced to cultivation in Europe about 1861.—CONDUCTORS.

WATERING TREES.—An editorial in the *Country Gentleman* calls attention to the injury to newly planted trees, which frequently results from continually watering. A newly planted tree, having no leaves, has no use for water to any great extent. If a tree does not push freely after planting, it shows that the pruning knife, and not the watering pot, is what is needed. Heavy watering only drives the air out of the soil, and compacts it so closely that the plant has not air necessary for the roots as well as the branches. Trees can die of suffocation as well as can individuals, and packing the earth so tightly that it cannot contain air is practically suffocation. Most observers know that a tree in leaf, which suddenly finds itself under an influx of water, by the overflow of a river or dam, dies in a few weeks. It is suffocated.

GRAFTING SEPARATED STEMS.—Mr. W. B. Robins, Philadelphia, writes:

"About three weeks ago, the vine, an Ampelopsis on a part of St. Mark's Church tower, was cut near the ground, about twenty feet from the root. Three of the stalks were cut so that nothing can be done with them, as a space of six inches was left between the ends of the stalks. One of the main stems was, however, simply cut through, as I stopped the man from doing more damage. The Vestry are desirous of saving this part of the vine, and we have been told that it can be made to grow together."

A letter of this kind brings closely to attention how little is known of the science of gardening by the hundreds of practitioners of the art about a large city. Undoubtedly this severed connection could be brought together if at once any one could be found with sufficient ability to adopt the ordinary methods of grafting to this peculiar case. A piece of a branch could readily have been grafted into the upper and lower sections, which piece would carry the sap through till the wound by the knife or hatchet should granulate. But no one can be found to do this work. The shoots from the stumps remaining will grow very vigorously, and soon reach the tower and clothe it again. The "gardener" knew how to chop the main stem apart, but not enough to repair his great blunder.

SMALL PARKS.—It is pleasant to find the popular appreciation of parks and city gardens growing rapidly. During the month of February, Philadelphia placed three more on its public plan, to be taken actual possession of during the year following this. Two of these were only of about three acres each—one the spot on which Penn made his famous treaty with the Indians; the other, to be called Stephen E. Fotteral Park, after a captain in the war of 1812, is a tract of nine acres. Scattered through large cities, a mile or so apart, these small spots are a great blessing to the poorer, as larger spaces are to the more fortunate classes.

THE JOPPA ORANGE.—This variety of orange, extremely popular in California, is interesting from the fact that it is not round like the ordinary orange, but is pear shaped. It derives its name from the fact that the seeds were brought from Palestine.

A BEAUTIFUL CONSERVATORY.—In the notice recently given of the death of Mr. Henry C. Gibson, of Philadelphia, reference was made to the admirable combination of art and nature in statuary and flowers which characterized his conservatory. It is considered the most beautiful combination of the kind in the United States, or possibly in the world. We are pleased to have had the opportunity of having an illustration made of a scene in this conservatory. It will be noted that even the vessels, for they can scarcely be called flower pots, in which the flowers are grown, are exquisite works of art. Everything is made to harmonize perfectly with each other. The flowers themselves, used for adornment, are selected in the main for a semi-artificial character. Even the little cupid on this occasion is made to be the bearer of a basket of flowers instead of the usual arrow and bow. Palms, ferns, Tillandsias, and Bromelias are chiefly used for the vegetative features of this singular scene of beauty,—while, as will be seen by the picture, much use is made of plants berried, the bunches of large red berries of *Ardisia crenulata* are particularly conspicuous in the picture. We very much doubt if any better illustration has ever been produced of the harmonious combination of art and nature as herein exhibited.

A BEAUTIFUL CONSERVATORY.

A NEW CALLA LILY.—Under this common name is now generally known what botanists would call *Richardia æthiopica*. It is unquestionably one of the best room plants grown—the only defect to its being a perfect plant for this use is its tall, lanky growth. It is too tall for many windows, and has the habit of falling around, unless the leaves and flowers are supported by a stake. The English papers now announce that a very dwarf variety had been reproduced, of which we give an illus-

tration herewith. The flowers are said to be broader and stouter than those of the one in common cultivation, and in many ways far superior for a household pet than the tall, lanky form referred to. We do not know that it has yet been introduced into American gardens, but our progressive florists will no doubt soon have it on hand. (See p. 69.)

CELERY, PARIS GOLDEN YELLOW.—SEE P. 76.

SWEET PEAS.—It is marvelous that so valuable a flower for cutting as the sweet pea should have been left for so many years unnoticed by florists. It is one of the oldest in cultivation, and yet has been improved only quite recently. Nothing now is more popular with florists than this delightful flower, and some are taking them in hand to improve them, as they have the pansy, dahlia, carnation, and other flowers. They are not only improving them, but giving them distinctive names, just as in the class of flowers mentioned. There are among them shades of pink, mauve, lilac, yellow orange, scarlet, purple, and even a white,—far much purer and delicate than the white of the old form.

PRIORITY IN PLANT NAMES.—In a large number of botanical writings just now it is clearly shown that the law of priority in a botanical name has not always been strictly observed, and that a large number of accepted names should be changed for others.

In general language there must be lexicons and dictionaries for universal use. There must be generally accepted works of reference in science, as well as in other branches of philology, otherwise there would be a babel of tongues. When these proper changes get into these botanical dictionaries MEEHANS' MONTHLY will adopt them. The fact, therefore, that this magazine adheres to the generally accepted nomenclature, is not to be taken that it does not regard some of the proposed changes as proper.

THE SEA-SIDE GRAPE.—Collectors of wild flowers in Florida almost always have among their treasures, leaves, flowers, or fruit of the Sea-side Grape, known botanically as *Coccoloba uvifera*. It is one of the most striking of the wild flowers of that region. It is now said that the timber is coming into general use, under the name of Cocobola wood; it being particularly valuable wherever very hard wood is desirable. It is especially popular for knife handles, the pink and violet tint of the wood, added to its great hardness, making it very desirable for that special purpose. It is usually a large shrub of about 15 or 20 feet high, but occasionally reaches a height of 40 feet, with a trunk a foot in diameter.

CROSSING FLOWERS.—A correspondent inquires what is the difference between crossing and hybridizing. The terms, as used, by those who improve fruit and flowers, are defined in this way: That crossing is only used where one variety is mixed with another variety of the same thing; for instance, one apple used to fertilize another kind of apple would be called crossing; but if an attempt were made to cross fertilize the apple and the pear, that would be called hybridizing. In other words, crossing refers to varieties of the same species, while hybridizing is used to designate that kind of crossing which is between distinct species.

NEW NAMES FOR OLD THINGS.—A correspondent, from Rio Vista, Va., complains of a very large number of fruits, sent out with new names, which prove to be entirely old, and in many cases worthless. He thinks that no new fruits should be sent out until they have been sent to some experimental station, and the fruit found to be really different from some old kind and worthy of cultivation. It should then be put into the trade. We doubt whether this would remedy the evil to any great extent; for the trouble chiefly arises from the readiness of people to deal with any person, no matter how irresponsible they may be. No responsible firm sends out things without being careful to ascertain that they are really what they are represented to be. The best remedy is to deal only with such firms as have a character for responsibility to maintain.

ILLUSTRATIONS OF FLOWERS.—It has long been a subject of remark, that so far as cuts of fruits are concerned, the same old cut frequently does duty for numberless new introductions; no one being able to tell the difference between them. In flowers, however, there has hitherto been no opportunity for such remarks, but, as illustrations of flowers are now coming into as general use as illustrations of fruit, the same trouble is arising. We have before us a catalogue of some pretensions, with a fern labeled *Polypodium vulgare*. The drawing, however, is of a very different fern, namely, *Polypodium spinulosum*, and this is only an illustration of what we frequently see. Unless care is used in this matter, much trouble and confusion will arise.

KOLREUTERIA.—This beautiful Japanese tree is not near so common as it deserves to be, notwithstanding that it has been in cultivation to some extent for a half century. It comes into bloom in June, and the numerous spikes of golden yellow flowers give the appearance of a glorious sunset. It is only a small tree, —rarely exceeding 25 or 30 feet in height. Some attempt has been made to call it "The Chinese Varnish Tree," but almost all now know it by its botanical name of Kolreuteria. It was named in honor of Dr. Kolreuter, a distinguished botanist of the past generation.

FRUITS AND VEGETABLES.

THE ORANGE SCALE IN FLORIDA.—A Baltimore correspondent inquires what is the best remedy against the scale insect on oranges. We presume he means on the orange trees. Only those who live in those regions, and have practical experience, could answer such a question properly. In a general way, all that can be said here is, that all kinds of oil are destructive to the scale insect. In this part of the world, apple, pear, cherry and other trees that have been covered with scale, and looking as if they were whitewashed, have been entirely cleared of these pests by cutting off all the young branches and burning them, and then washing the remaining parts of the tree with pure linseed oil; possibly cotton-seed oil, or any other vegetable oil, would do as well. Mineral oils, however, are destructive to the trees as well as the insects, and we have heard of persons, who used what they supposed to be pure linseed oil, have had the trees die afterwards; unquestionably from the fact that the oil was adulterated. We have no doubt that something of this kind would be very successful with the orange scale; but, as we have said before, we should want to try the experiment first in a comparatively small way, so as to be certain that no injury would result.

THE CURRANT TWIG BORER.—Mr. Edmund Hersey, Hingham, Mass., kindly sends the following valuable note:—

"The fly that lays the egg which produces the borer that injures the currant bush, cuts off from one to two inches of the most vigorous shoots when they have made a growth of four to six inches, and others puncture the shoot, thus cut off, about three-fourths of an inch below the point cut; in this puncture is pushed an egg; in a few days the little worm springs into life and at once cuts his way to the pith, and then turns down, growing larger as he progresses, coming to full size about one foot from the starting point, where he makes his way out the following spring, a perfect insect, leaving the twig so weakened that it will usually die during the summer. Remedy—Within a week after the twigs are seen to be cut off, with a sharp knife go over the bushes and cut off an inch more of each twig that has been cut by the fly."

IMPROVEMENT OF CELERY.—When this subject was introduced into MEEHANS' MONTHLY several months ago, we had no idea of the great interest that has since been awakened by the line of thought there suggested. It was pointed out that the improvements to be made in celery must be in certain lines, in order to accomplish any specific improvement; some of these lines we pointed out. It has been thought best to introduce a few more of these specific points. There is one class especially which is quite a favorite in France, namely, those which have the foliage useful as well as the stalks for edible use. In all well conducted dinner tables it is essential

CELERY, WHITE SOLID PASCHAL.

to have what is known as garnishing. Some very pretty forms of celery have been raised, in which the leaves are used for this purpose. We give a sketch of one which is known as the White Solid Curled; the leaves are quite as beautiful as those of Curled Parsley, or Endive. (See cut p. 77). Those who are fond of good economy contend that it is a gain to have a variety of celery, in which there is absolutely no waste.

Again, there has been much improvement in the line of what is known as Yellow Leaved Celeries. One which we also illustrate (see p. 74) is known as the Paris Golden Yellow. Those of this class are not merely interesting from the color of the leaves, but the flavor of this style of celery is much less liable to acridity than any other.

In our recent article, reference was made to that class which had been improved chiefly in the line of broad solid leaf stalks. Our attention has been called to one which has not only this broadened feature, but the stalks are thick at the same time, an excellent point. No name was given, but it is clearly the White Solid Paschal, of Vilmorin's catalogue.

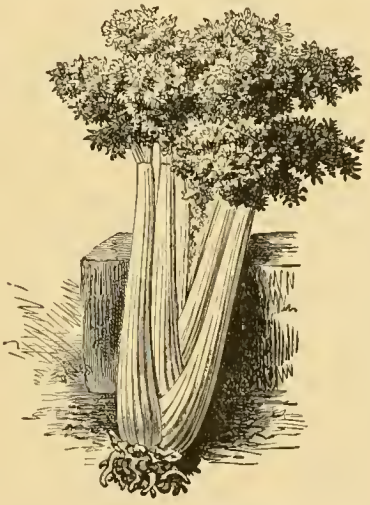
FRUIT CULTURE IN THE SOUTH.—Some time ago the fruit lovers in the Southern States held a meeting at Quitman, Ga., at which representatives from all parts of the South attended. Mr. P. J. Breckmans presided. The *Augusta Chronicle*, referring to the assemblage, states, "that a more unselfish body of men were never gathered together, having at their own time and cost, met to discuss what would best tend to advance fruit growing in the South." It is said that the peaches on exhibition were the finest ever seen. Some of them weighing 18½ ounces apiece. The Leconte Pear, belonging to the same class as the Kieffer, and at one time supposed to be free from blight, is now said to have become a perfect wreck under its influence, whole orchards having the appearance of having been scorched by fire. The propriety of teaching botany as one of the branches of school education was discussed. Until, however, teachers themselves understand something of botany, nothing can be done in this direction,—aside from the fact that the number of branches already taught in public schools cover more time than can be given to present studies.

EASTERN PEACH TREES IN CALIFORNIA.—Great complaints have been made, because a number of car-loads of peach trees sent to California were condemned and burnt, but it appeared in the evidence that the stems were infested with the peach borer. No one ought to complain that the California authorities exercised the power of destroying trees so infested. Though we doubt very much whether the peach yellows, as a disease, will ever appear in California, there is no question about the injury which would be inflicted to the peach orchards of California, if the borer and similar destructive insects were allowed to get a foothold in the territory.

IMPORTATIONS OF TREES TO CALIFORNIA.—California is doing well in endeavoring to keep out fungi and insects that produce plant diseases, and yet it would seem that the efforts are not always wisely directed. At this writing there is a bill before the National Congress, by which any railroad company that shall take to California any trees or plants on which there may be parasitic fungi, or insects which are deemed injurious to vegetation, shall be fined $1000. As it is utterly impossible for a railroad company to examine the contents of boxes placed in their hands for shipment, and even to examine them properly without the aid of an expert in entomological and botanical matters, it simply means that they will not take plants at all; and just how California is to be benefited by shutting out absolutely all introductions of plants and trees from other countries or states, except its own, is not very clear. The inevitable result would be smuggling. Trees and plants from foreign countries and other states would certainly have to be had, and they would get in in various ways in spite of such laws as these. Even under the California State laws of last year, a large amount of smuggling has already been going on. We have been accustomed to laugh at those foreign nations that established what were known as phylloxera laws. They endeavored to keep the insects out of their country by just such laws as these which Californians have in view, and yet to-day the little insect has spread itself over the whole of Northern Europe.

USE OF THE TOMATO.—Our correspondents are critically disposed, a faculty which we very much value, as inquiries often bring out new truths. Referring as we did recently to the slowness of Europeans in making use of that excellent vegetable, the tomato, a correspondent suggests that the same is true of Americans; that, although people of Spanish origin had used it for centuries or more as a common article of food, it was not generally in use in our country,—if indeed it was in use at all until the revolution in San Domingo, when many families driven from that country settled in Philadelphia. They brought the use of the tomato with them. The name love apple, applied to the tomato, should give it an anti-revolutionary character.

THE NECTARINE.—The unfortunate who has not caught a nectarine in its best stages, has the summit of epicurean pleasures yet to aspire to. It wants to be perfectly ripe and then allowed to shrivel, just a little, in the sun. The man who got off the sentence that "doubtless the Lord could have made a better fruit than the strawberry, but certainly he never did," would be ashamed of himself could he once get a bite of a perfectly manipulated nectarine. There is difficulty in fruiting them on account of the curculio. The smooth skin is attractive to this insect pest. Some day the man who has conquered the curculio in the plum and made plum growing immensely profitable, will try his hand on the nectarine also.



CELERY, WHITE SOLID CURLED.—SEE P 76.

PEACHES FOR NEW JERSEY.—Professor Byron D. Halsted says that in New Jersey peach culture, Smock, Crawford Late, Reeves, Pride of Franklin, Salway Morris, Rare Ripe, Old Mixon, President and Mountain Rose are among those most generally grown. Chain's Choice, a newer one, is said to be superior. Stump the World is also a great favorite in New Jersey.

GLOBULAR CARROTS.—These have been produced so perfectly round, that one might be pardoned for considering they are small red turnips. The origin of the original red carrot is yet a mystery. It is supposed to have been developed from the wild carrot, which has a white root, but all attempts to develop a red root from this wild kind have failed.

BIOGRAPHY AND LITERATURE.

THE ABSENT ONE.

Her cheek is like a tinted rose
That June hath fondly cherished,
Her heart is like a star that glows
When day hath darkling perished.
Her voice is as a song-bird's sweet,
The drowsy wolds awaking—
But ah, her love is past compare,
And keeps my heart from breaking!

Lost sunbeams light her tresses free,
Along their shadows gleaming,
Her smiles entangle memory
And set the soul a-dreaming.
Her thoughts, like seraphs, upward soar,
Earth's narrow bounds forsaking—
But ah, her love abides with me
And keeps my heart from breaking!

FLORENCE EARLE COATES, in April *Lippincott's.*

ROBERT J. PARKER. — Very often some movements, which have great results, are started in a small way by one or two persons. In regard to the great love of the English people for new kinds of American annuals, possibly much is due to Mr. Robert J. Parker, of Tooting, near London. He kept in close correspondence with most of the leading American explorers, and received from them seeds of those more ornamental American plants that were likely to be popular in English gardens. Much of the love of the English for American flowers is due to Mr. Parker. We notice by the English papers that he died on the 21st of January, in his 65th year.

CHAMISSO.—This is a familiar name with those who study the wild flowers of the Pacific coast. A large number of pretty things familiar in gardens, were introduced to Europe first by him, of which the well known California Poppy, which is known as *Eschscholtzia Californica*, is one. This was when he was attached as naturalist to the famous Kotzbue expedition in 1815 on the ship Rurik. He died in Berlin in 1838. Like some other distinguished botanists, Adalbert Von Chamisso achieved fame as a poet. He was born at Champagne, France, in 1781.

CHARLES M. HOVEY.—Mr. Hovey was among the earliest of the horticulturists of our country to take hold of the literary advancement of the cause. His *Magazine of Horticulture* was for nearly a quarter of a century the only serial devoted to horticultural advancement. The magazine especially had great influence in building up the love for trees and plants and fruits, which is now proverbial in connection with the Eastern States. We see by a Boston paper that his family have donated a large part of the library of their late father to the Horticultural Society of Massachusetts, of which he was in reality one of the founders. The library of the Massachusetts Horticultural Society is already an enviable one, as it embraces not merely works on horticulture as a practical art, but also is extended to scientific works in the many branches of intelligence that give interest to horticultural pursuits.

DR. STERRY HUNT.—This distinguished man died in New York City, February 11th, in his 66th year. He was known chiefly in connection with geology and other branches of natural sciences, but his was one of those rare minds that take an interest in every art and science that contributes to the welfare of humanity. He was particularly a friend of horticulture, and probably was as much interested in this delightful art, as a matter of personal pride and pleasure, as in the branches of science in which he was so well known.

BOTANICAL MAGAZINES. — These are not usually profitable undertakings, those who bear the burden of the work of editing and publishing generally working for the good of the science they love. Hence we are glad to note the *Botanical Gazette*, edited by Dr. Coulter, of Bloomington, Indiana,—and the *Bulletin* of the Torrey Club, by Dr. Britton of Columbia College, New York, apparently prospering. American botany is worthily represented by them. The annual subscription to the former is $2.50 and the latter $2.

FIRE BLIGHT IN THE PEAR.—This is a disease which will frequently cause the death of a tree, perhaps twenty years old, or a large branch, apparently within a few hours. The tree may be healthy so far as our attention may be called to it, and in a week every leaf be as black as if the tree were scorched by fire, and yet not exactly as if scorched by fire, because the result would then be brown, whereas the leaves die away black and give out a fetid odor. In all examinations that have been made by the conductor of this magazine, there is a portion of the stem which seems to be first attacked nearly down or at the base of the branch destroyed. This generally extends around the branch. Dug into with a knife, it will be found to be brown and apparently decayed, and there is a distinct line above which the bark appears to be greenish, only comparatively dry. That this is the seat of the disease must be evident to any one who has his attention particularly directed to it. The researches of botanical microscopists, however, seem to indicate that the disease germ is a species of Bacterium, which has been named by Prof. Burrill, *Micrococcus amylovorus*, the germ of which it is said enters through the flowers, and through pores or openings in the bark. It is said that this organism can be cultivated in a laboratory, and after being grown there for several generations be taken back to a tree and will reproduce the disease. Attempts to inoculate the disease through the leaves have failed. It does not seem to extend through the whole tree, for if the parts attacked are cut off, healthy new branches and sprouts will come out, and often a tree is never attacked but once. It is just possible that some kind of washes applied every year regularly to the trees, starting early in the Spring might be a good precaution. The writer has seen trees, however, covered with sulphured whitewash badly stricken, but it may have been that the disease germs had penetrated the bark before the wash had been applied. There is much to be learned yet about this disease.

A VENERABLE HORTICULTURAL SOCIETY.—On Thursday, the 3rd of March, the Worcester (Mass.) Co. Horticultural Society, celebrated its fiftieth anniversary, with very interesting exercises. A large number of horticultural societies have been established in various parts of the United States, but have mostly been left to the management of commercial men. This is one of the societies that originated solely in the love of horticulture and with the main desire of spreading this love throughout the whole community. The result of its work is to place the city of Worcester in the front rank among the cities of the United States, in which the enthusiastic love of horticulture is especially characterized. It had its origin in fact, as a kind of protest on the part of certain members of the County Agricultural Society, who were devotees of horticulture, against the merely utilitarian spirit of the leading managers of that Society. Apples and vegetables that had a money value received consideration, but flowers and gardening were classed with crazy quilts and ladies' fancy work. It was not thought to be an occupation worthy of intelligent and cultivated people. For many years it had a struggle—its only revenue coming from the admission fees of 12½ cents, but in 1846 it had a surplus of $1200, which was augmented by a bequest of $3000 from Daniel Waldo. In 1850 the Society was able to build its present magnificent hall. It received from two contributors $5000, which helped to make its financial situation easier. There is no question but the great advance in the science of horticulture which has occurred during the past fifty years in the Eastern States, has been largely aided by the work of this great Society. The improvement of the pear has always attracted especial interest from the members,—John Milton Earle devoting himself to this particular branch with rare enthusiasm,—Mr. D. W. Lincoln being an able coadjutor in this work; the latter has had one hundred and five varieties at one time. Its library at the present time contains about three thousand bound volumes, covering a large field both in horticulture and botanical science. Lectures and discussions have been essential aids in the work of the Society. The reports of the Secretary, E. W. Lincoln, have for twenty-eight years been among the most valuable contributions to horticultural literature. On the roll of its membership have been governors, judges, eminent public and professional men in every walk of life. The occasion was one which will be long remembered in connection with the horticultural history of Worcester.

GENERAL NOTES.

CONDENSATION.—E. Zimmerman, Buffalo, N. Y., kindly says:—

"We enjoy the solid contents of your MONTHLY—one does not have to stop and hunt for the few good grains among a bushel of chaff and weeds, as is so often the case."

This is copied because it pleases the publishers to note that this point is so well appreciated. Many very well written articles offered us have been declined, solely because aside from the well rounded paragraphs all of real value to the readers could have been given in half a column. There are few paragraphs in the magazine, but could be strung out into a three or four page article with perfect propriety as literary matter goes,—and yet tell no more worth remembering, than the condensed paragraphs furnish.

TRADESCANTIA ROSEA.—A few weeks ago our honored contemporary, the London *Gardener's Chronicle*, had a beautiful cut of an *Hedychium* and text to match. One was marked *H. coronarium*, the other had *H. Gardnerianum*. Of course the blunder caused a smile and a wise shake of the head, for who does not feel that such a blunder could not be made by himself!

The smile had scarcely faded when the March number of MEEHANS' MONTHLY appeared, when lo! and behold! *Tradescantia rosea*, correctly marked in the picture, appears as *T. pilosa* in the text! It is no use explaining how these troubles come. All we can do is to ask the careful reader to erase "pilosa," and mark *rosea* in its place.

MOON FLOWER,—EVENING GLORY.—The *Ipomœa bona-nox*, has been for half a century under cultivation, and a Southern correspondent says was quite as well known as "Evening Glory," as its morning-opening relative was well known as Morning Glory. It may be added, that many who already had it growing, bought it over again, when re-christened "Moon flower."

PEACH TREE "YELLOWS."—The disease in the Peach known as the "yellows" has existed in some of the Northeastern States, possibly from the earliest period of peach culture. Millions of peach plants have been sent during these many years to the far South, and for over a quarter of a century to the Pacific, but the disease does not appear there. No sooner were they sent to Michigan, and some other States, than the disease became sadly prevalent. Certainly the germs of the disease must have been introduced into the States enjoying immunity. Why have these States escaped? In a recent issue of MEEHANS' MONTHLY a reason was offered, the result of experiments, which can easily be disproved if fallacious. This has been copied by the *California Fruit Grower*, with the following comment:—

"While Prof. Meehan is engaged in the nursery business and has in the past made large shipments of peach trees to California, we do not impute to him any selfish motives in this expression of his opinion, for the writer holds no man in higher estimation and believes that he is honest in his belief."

It is to be regretted that a purely scientific question cannot be discussed without interested motives being suggested, though in the same sentence repudiated. It so happens that the original firm of Thomas Meehan, and the more modern, Thomas Meehan & Sons, do not raise peach trees, except in small quantity for home sales, and do not ship peach trees to California.

THE NEXT PLATE.—It seems that the lovers of cactuses should have some attention paid to their tastes, considering how much the taste for this tribe of plants has grown of late, especially since Mr. A. Blanc, of Philadelphia, undertook especially to patronize and illustrate them. The *Opuntia Rafinesquii* will be the one illustrated. It will probably be pronounced one of the handsomest plates of the whole volume.

OPUNTIA RAFINESQUI

OPUNTIA RAFINESQUII.

RAFINESQUE'S PRICKLY PEAR.

NATURAL ORDER, CACTACEÆ.

OPUNTIA RAFINESQUII, Engelmann.—Joints (deep green) and flowers larger than in *Opuntia vulgaris*, often with a red centre, and with more numerous (ten to twelve) petals; leaves spreading, longer and narrower than *Opuntia vulgaris;* axils, some of them bearing a few small spines and a single strong one, which is from nine to twelve lines long. (Gray's *Manual of the Botany of the Northern United States.*)

The Prickly Pear is so named from its fruit, which is shaped like a small pear, and has often prickles over its surface, in common with its parent plant. In some species the fruit is delicious when ripened under favorable conditions, having somewhat the flavor of the large gooseberries for which England is so famous, and to which, indeed, the plant is very closely allied. In Major Emory's "Notes of a Military Reconnoissance from Fort Leavenworth to San Diego," in 1846, he says in his "journal," under October 4th: "To-day I eat for the first time the fruit of the prickly pear, the 'yerba de la vivera' of the Mexicans; as I was thirsty it tasted truly delicious, having the flavor of a lemon with crushed sugar." The species referred to by Major Emory may have been *Opuntia Tuna*, or some other species allied to Rafinesque's Prickly Pear. In parts of Europe, where some species have been introduced, they are cultivated in large quantities for their fruit, and form an article of considerable export from the Continent to the celebrated Covent Garden Market in London. The fruit of Rafinesque's Prickly Pear is seldom used as food, but when luxuriantly grown and well ripened they will at least give some idea of the good qualities of its larger fruited allies. Those accustomed to measure the full value of a plant by its direct use to man, or the animals in his immediate service, may wonder what such ungainly prickly cactuses were made for. But there are myriads of mouths to be provided for as well as those of the higher animals. Insects and small creatures of many descriptions which can crawl through the stockades of spines feed on the juicy stems, which, as they continue from season to season, give these creatures something to eat all the year round. As there is often little other herbage but that which these succulent plants afford in the dry, sandy plains where they abound, one might almost say their creation was an act of supreme wisdom in furnishing food for numberless living things. Even here the benefit is ultimately to man, for these smaller members of the animal kingdom in turn become useful to those more powerful, and these in turn come to the aid of mankind. Again, as they are, they seem to serve some of the larger creatures. Dr. Vasey in the "Entomologist and Botanist" for 1870 speaks of a species of rat in the Rocky Mountains which not only stores up the seeds for future use, but makes barricades of its thorny stems around its holes to prevent other creatures from stealing its reserved supplies. This reference is probably intended for our species together with a close ally, *Opuntia Missouriensis*, which grow together in great quantities on the plains of Colorado, and indeed, ascend to some height up the sides of the Rocky Mountains. In some of our Eastern States the plants are set on the tops of low walls, where they not only make an effectual guard against trespassers, but give a very original appearance to garden scenery. The geological poet, Solomon Conrad, refers to this use of Rafinesque's Prickly Pear in the pretty lines to his friend, Dr. Moore.

"———he who in other days
Had walked with statesmen on the thorny path
Of public needs, and who was ably skilled
To guide their councils—now from anxious cares
Of state retired, his evening wish was ever
To lie in Nature's lap, and like a child
To listen to the story of her youth."

And then he tells of the many scenes of nature they had together visited and enjoyed, and among other things says:—

"Do I not see the garden wall of stone,
Rude, low, yet with the prickly cactus crowned,
So picturesque and rural———"

In New Jersey, where the scene of Conrad's poem is laid, it is the prevailing species, though long confused with *Opuntia vulgaris*, which species is very rare there, as it seems, through the researches of Isaac C. Martindale, and probably has there reached its northern limit.

The confusion referred to has existed for a long time. Rafinesque seems to have been the first to note a distinction between this and *Opuntia vulgaris*. Indeed, he made several species out of what is now considered but the one. In regard to these names Dr. Englemann remarks, in his article on cactaceæ in the fourth volume of the Pacific R. R. Reports, "as it seems impossible from his incomplete descriptions to make out what he meant by three different names, and as we know only one species in those states of the Mississippi Valley, I take the liberty of discarding these names and of substituting the name of the author for the western species." Thus we see the origin of the name *Rafinesquii*.

C. S. Rafinesque was a remarkable man in his day, though regarded by his contemporaries as somewhat eccentric. He was of French parentage, but born in Galata, near Constantinople, and had the benefits of a superior classical education. Before coming to America he visited many quarters of the globe in pursuit of objects of natural history. He was shipwrecked and lost most of his fortune on the coast of Nova Scotia on his first voyage to America, but kept up his zeal for natural history to the last. In a garret in Philadelphia, surrounded by his specimens of natural history and his drawings, but with scarce a crust of bread to eat, he died soon after issuing his "Medical Flora of the United States."

Opuntia Rafinesquii is the most northern species of the cactus family. The one figured in Miller's "Figures," published in 1771, refers to this species, and in his description he says the plant was brought from Nova Scotia. He seems to have suspected its distinction from *Opuntia vulgaris*, for he notes that it was much hardier than the one grown in Italy, and it is much hardier than *Opuntia vulgaris*. The distinction between the two has been well described by Mr. I. C. Martindale. *Opuntia Rafinesquii* has larger flowers, occasionally with a reddish centre, more numerous petals, the fruit fully one and a-half inches in length, with an elongated base, and the depressions on the top not so deep as on *Opuntia vulgaris*. The older joints have a darker green appearance, and the leaves longer and more slender. This is the characteristic of all the northern forms. Captain Back reports finding the banks of the Rainy River in 48° 40′ lined with them.

Besides the interest attached to the plant from its geographical relations, it presents many features which render it an acceptable plant to the students of plant life. The "joints," as the sections are technically called by botanists, are charged with moisture, which, under the ordinary law of liquids, should expand under a temperature below the freezing point. But as soon as this degree is reached the juices seem to diminish and the 'joint" shrivels and falls flat on the ground. It is not supposable that the sap freezes; but if it did, there would be abundant room for expansion without rupturing the outer coatings at least. Another interesting fact is that the stamens are irritable. When these, in a flower expanded under the full sun, are touched, they move in various directions, apparently without rule. Then it has in its structure an immense amount of curious crystals of oxalate of lime, which are very beautiful objects for microscopic examination.

In the United States, so far as we know, it has not been found further north than Nantucket, but it may have formerly been much further, for it seems easily destroyed by good culture, notwithstanding its succulent character. Dr. Schneck remarks, in the geological reports of Indiana, that it was formerly found in the lower Wabash Valley, but has now disappeared. It is not found west of the Rocky Mountains.

EXPLANATION OF THE PLATE.—Complete plant originally collected by the author at Ottawa, Illinois.

WILD FLOWERS AND NATURE.

A JUNE EVENING.

O, now's the hour, when the air is sweet,
And birds are all in tune,
To seek with me the cool retreat,
In bright and merry June;

When every rose-bush has a nest,
And every thorn a flower,
And every thing on earth is blest,
This sweet and holy hour.—PERCIVAL.

VARIATION OF THE RUDBECKIA HIRTA.—Some months ago we called attention to the singular fact that during the past season a large number of cases had occurred where specimens of the *Rudbeckia* were found with a crimson blotch at the base of the ray petals. This had never been noticed by any botanist before; and it was singular that so many cases should be discovered that year. Others have since written to us that cases were found elsewhere. We have now a note from Florence Beckwith, of Rochester, stating that last summer near that city she found a number of specimens marked in a similar manner, and that no such samples had ever been brought into the botanical society of Rochester before by any local botanist. It is certainly remarkable that this variation should appear, apparently so suddenly, over so wide a territory.

THE DWARF WILD ROSE.—This, the *Rosa lucida* of older botanists, though several species are often confused under this name, is one of the most popular of Wild roses. The flowers are large in proportion to the size of the plants, which is not often more than a foot or two—while it has probably the sweetest odor of all Wild roses. It is common through most of the Atlantic States, and loves to grow along borders of woods and roadsides, where its delightful fragrance may please the traveler. It also possesses the charm so eminently connected with American plants, of changing its leaf-tints to a brilliant style in the fall of the year, and after these have fallen, the rosy, berry-like haws keep up an interest in it till quite late in the season. It is a gem amongst wild flowers.

AZALEA NUDIFLORA.—Dr. W. H. Seaman, Washington, D. C., furnishes the following item to the history of the *Azalea nudiflora*:—

"*Azalea nudiflora* is one of the most variable of our wild flowers. Gray, in his Manual, says, 'there are numberless varieties.' He also says it grows in swamps, while it is well known that throughout the Middle States it selects often the driest hills, as on the Short Hills of Union Co., N. J., where I have seen quantities of it. But there it is almost destitute of odor, while my New England friends insist that with them it is very fragrant. A few years ago at Pan-Mar, on the slopes of the Blue Ridge, where it crosses from Maryland to Pennsylvania, it seemed to me all varieties of this Azalea were to be found. Often the flowers and leaves were on separate branches, sometimes the leaves were developed before the flowers, sometimes not. Some were fragrant, some odorless. I thought I could connect the odor with the amount of glandularity of the flowers, but the result was doubtful. It was easy to find forms so diverse as to appear to have specific differences, but intermediates could also always be found." [In addition to Dr. Seaman's note it may be added that Mr. Lightfoot, a student at Swarthmore College, once found a plant in which the calyx was changed to corolla. The flower appeared as if two corollas were like two cups, placed one within another.—CONDUCTORS.]

ORTHOGRAPHY OF BOTANICAL NAMES.—A correspondent, accepting the invitation for strict criticism as regards anything that appears in MEEHANS' MONTHLY, suggests that the Romans had no letter z in their alphabet, and could not possibly know anything of Brazil—that when z is Latinized to make a botanical term, as for instance Brazilianum, we should drop the z for an s. We do not think that botanists have always followed this rule. For some such reason Baldwin has been made *Balduina*, and Lewisia *Levisia* by some botanists who are, however, not followed generally.

SUDDEN APPEARANCES OF VARIETIES AND SPECIES.—Dr. J. T. Stewart, of Peoria, Ill., referring to the sudden appearance of runners in the Cyclamen, suggests that this may be a reversion to a former type instead of the introduction of an entirely new character, and he refers to the beautiful Cut-leaved Silver Maple, known in gardens as *Acer Wierii*, which was discovered among common maples by Mr. Wier, formerly a nurseryman at Peoria. As this sudden departure from the ordinary Silver Maple is very wide, he asks how can we account for such deviations? This is yet one of the secrets of nature, which botanists have not been able to unravel. The senior conductor of this magazine, however, has often referred to these and similar cases in scientific papers, as showing that changes in nature, which are supposed to take many hundreds of years of slow modifications to accomplish, are by no means the rule; indeed that nature when it does change almost always does so suddenly and without the intermediate modifications which are generally supposed to be necessary. He presented a paper at the Troy meeting of the American Association, to show that modifications in nature were generally by leaps, and that there really was no evidence to show that any great changes had ever occurred by slow modifications. The views presented in that paper were opposed in the meeting by Professors Gray, Morse, Riley and others, but the lapse of time has rather confirmed than weakened the views of the author of that paper.

PAPER FROM A TAMARACK TREE.—An Oregon paper states that in an open seam in a Tamarack tree, a sheet of old bark was taken two feet long and one foot wide, which exactly resembled paper. We have never seen the inner bark of a Pine tree of this character. By the way, the Tamarack tree of the Eastern States is the American Larch, but we suppose the Tamarack tree of Oregon would be some Pine. Can any friend on the Pacific explain what is meant by this paper bark and what is the Tamarack tree?

THE FERNS OF CALIFORNIA.—The number of ferns of the United States is not large. The greatest variety is in semi-tropical countries where the climate is comparatively moist. It is believed that about one hundred species will cover all in the United States. A correspondent of the *Pacific Rural Press* states that only about twenty are peculiar to the Pacific coast, of these one is the *Polypodium Californicum*. This is closely related to the common *Polypodium vulgare*. A closely allied one is the *P. Scouleri*. Although growing on trees, it sometimes makes fronds two feet long. The gold fern, *Gymnogramme triangularis*, with slender, black-brown, polished stipes, and sulphur-yellow under surface, is found in partial shade in woods and canyons. Among the maiden-hair ferns, the delicate *Adiantum emarginatum* grows in sheltered moist places. The *Woodwardia*, or chain fern, is one of the commonest evergreen ferns, and is used largely in floral decorations. One of the grandest of the Californian ferns is *Woodwardia radicans*, with fronds sometimes reaching five feet high. Among the shield ferns the *Aspidium*, forms of our Eastern *Filix-foemina*, are the most common. They grow here from two to four feet high. But one peculiar to California is what is known as *Aspidium munitum*—the fronds are usually about a foot long—one of the handsomest of American ferns, and largely used in popular decorations. The *Cheilanthes gracillima* is a very delicate fern, and is called in California the lace fern. It grows in the crevasses of moist rocks in many portions of California. Then there is an allied fern called *Pellæa ornithopus*, which grows in rocky places on mountain sides—from the peculiar form of the pinnules, it is often called in California the bird track fern. This grows in rather drier places than other ferns. A closely allied species is the *Pellæa andromedæfolia*, growing in rather moister places than the others. This is popularly called, from the shape of its pinnules, the coffee fern, as, when covered with its sori, it resembles a coffee bean in shape and color. The most common fern, however, in California, as in so many parts of the world, is the common brake fern—*Pteris aquilina*. It is more downy in California than in the other parts of the world, and towards the north grows very tall. The writer of this paragraph has seen it near Victoria so tall that he could not be seen in wading through the immense masses of this fern, and he is not very much below six feet either. The other species peculiar to California are comparatively local.

English Names for American Cone-bearing Trees.—Prof. J. G. Lemmon, the eminent botanist of Oakland, Cal., has published a very useful hand-book, giving popular descriptions of the cone-bearing trees of the Pacific coast, with an endeavor to select from among the numerous common names that are given in various places to the several trees, one that shall be adopted for universal use. It is not likely that this can be done, as the parties in the several districts where any one local name prevails, will not be induced to change the names familiar to them for others less familiar; and, moreover, some of the names adopted by the Professor are so different from those that are in common use outside of the localities in which they originated that it would be difficult to get the names that he would suggest adopted in general literature. For instance, he would call the *Picea pungens* of the Rocky Mountains, "Prickly spruce," but we doubt whether many persons ever heard of this term in connection with this spruce; and, as it has gone into general cultivation as the Colorado Blue Spruce, it seems hardly likely that that name would now be abandoned for "Prickly spruce." The Professor suggests that blue spruce might be used as an alternative; but numbers of other plants are known in a general way as blue spruce. There is a blue spruce which has been known in the old world as a form of the Norway spruce, and this is universally the blue spruce of horticulturists in the old world. In America the blue spruce has long been known as a familiar term in connection with a form of white spruce. If the word Colorado should be attached to blue spruce, this identifies it as the form from Colorado and would avoid much of the confusion which otherwise occurs. Undoubtedly, however, a large number of the names selected by Prof. Lemmon will come into general use; and it is an extremely useful attempt to get out of much of the confusion which has resulted from the application of numerous names to the same thing.

Trillium erectum.—In reference to this beautiful wild flower, figured in a recent number of Meehans' Monthly, Mr. James Reese states that it is very abundant in the woods about Strasburgh, in Ohio.

Lewisia rediviva.—This was named by Pursh in honor of Mr. Meriwether Lewis,—of Lewis and Clark, who made an exploration across the continent to the Columbia River in 1804. The plants of this expedition were brought to Philadelphia where Pursh had the opportunity to examine them. Signs of life after so long a time in the herbarium were noted, the root was planted, and lived and grew for a whole year before dying, and hence the name redivivus was suggested for it. Mr. Meriwether Lewis was private secretary to Jefferson, when the expedition was planned in the house of Bernard McMahon, near what is now Germantown Junction, in Philadelphia, and Captain Clark detailed with him as a companion. They were both friends, having been born near the same place in Virginia,—Clark in 1770, and Lewis in 1774. The expedition started in 1804. It suffered severely, and Lewis' reason was somewhat affected by the hardships of the journey. While in a fit of insanity, he committed suicide in 1809.

LEWISIA REDIVIVA.

Though the specimens of this plant were collected in Oregon, its boundaries are much further east—our specimens were from Nevada. It lived and flowered finely for a number of years in rockwork, which was finally destroyed—and when put in ordinary garden ground lived only a year afterwards. It belongs to the Portulaca family of plants, and has flowers varying from white to rose. Many Portulacaceous plants have irritable stamens, but the writer has never detected this in the stamens of *Lewisia*. The roots contain a large portion of starch, and are eaten by Oregon Indians, who call the plant Spael Lum. The outer portion of the root is extremely bitter.

THE DOG-TOOTH VIOLET. — *Erythronium Americanum* is one of the best known of the early spring flowers of the Atlantic States. The spotted leaves and yellow flowers are quite marked. On the Pacific slope the Dog-tooth violet is white, and has several flowers on a raceme, while the yellow Eastern one comes up singly from the root. The Western one is *Erythronium grandiflorum*.

BLECHNUM SPICANT.—Of the ferns known to botanists, comprising the genus *Blechnum*, and which furnish many ornamental forms to the cultivators, few are found among the wild ferns of the United States. In the Northwest regions of the Pacific coast, however, the Hard fern, *Blechnum spicant*, is one of the most frequently met with in shaded woodlands.

GLADIOLUS LEMOINII.—SEE P. 90.

SUBSTITUTES FOR TEA.—A number of our native flowers have been used as a beverage,—though not exactly as a substitute for Chinese tea. The natural order of Ericaceæ has furnished no less than four, of which the *Gardeners' Chronicle* says :—

"*Ledum palustre*, L.—An erect, small-leaved bushy shrub. Native of Canada and Labrador, where the leaves are used as tea under the name of Labrador tea.

Ledum latifolium, L.—The Cree Indians in the Hudson's Bay territory use the flowering tops of this plant as tea; they are gathered when in full flower, and dried, when they have an odor between that of Tansy and Camomile. The leaves are esteemed pectoral and tonic, and are said to have been used as a substitute for tea durning the war of Independence. It is called Karkar-pukwa, or Country tea.

Kalmia angustifolia, L.—The twigs, with the leaves and flowers, are known by the Cree Indians in the Hudson's Bay territory as Bitter tea; the infusion is used more as a medicine than as a beverage.

Gaultheria procumbens, L.—A small, creeping, shrubby plant, native of shady woods in mountainous districts in Southern Canada and the Northern United States; it is known as Mountain Tea, Jersey Tea, or Tea-berry. The leaves have a pleasant aromatic flavor, and an infusion is used in some parts of North America as a substitute for China tea, under the name of Mountain or Salvador tea."

It is worthy of note in regard to *Kalmia angustifolia*, one of the commonest and most beautiful of the wild flowers of New Jersey, that it bears the common name of "Sheep Kill," it being reputed fatal to sheep. The writer has believed the injury comes from indigestion, being eaten at particular seasons, and not from any toxic character,—and this is strengthened by the fact above noted of the use as a beverage by the Cree Indians. Numberless plants, known to bear no poisonous character, cause the death of cattle under some such circumstances. (See p. 68, note by Prof. Maisch.)

Some of the Vacciniums or cranberry-like plants, also of the Ericaceous orders, have been used in some parts of the world as a beverage when in infusion, but none, we believe, of our American species.

BUTTERCUPS.—The wild buttercup of Pennsylvania, Maryland and New Jersey is chiefly if not wholly the bulbous buttercup, *Ranunculus bulbosus*; but from northern New Jersey, and in most of the Eastern States the prevailing kind is the tall buttercup, *R. acris*. To those accustomed to distinguish nice shades of color, a field of the latter seems paler. The young botanist can distinguish them by the sepals of the former being reflexed.

NUPHAR ADVENA.—A Charleston correspondent states, that along the waters of Chattogata Creek, the yellow flowers of this pretty water plant are known as "globe lilies." She also states that the "Rose of Sharon" of that part of the world is the scarlet Hibiscus, probably meaning the *Hibiscus coccineus*.

GENERAL GARDENING.

A CONNECTICUT SCENE.

Groves darkly green, white farms, and pastures gay
With flowers—brooks stealing over sand
Or smooth-worn pebbles, murmuring light away,—
Blue rye-fields, yielding to the gentle hand
Of the cool west wind,—scented fields of hay,
Falling in purple bloom. —PERCIVAL.

GROWING VIOLETS IN FRAMES.—A correspondent from Riverton, N. J., inquires the best method of growing violets in cold frames. It is so easy that no special treatise that we know of has ever been written on the subject. Old plants can be divided in very early spring and the young sprouts set out in a bed of very rich earth—they will then stool and make plants which will transplant very easily with balls of earth ; any common garden frame could then be placed in the position desired and filled with good earth and the plants transplanted into these frames, so that the plants may nearly touch each other. Watered and shaded for a few days they will soon recover, and will continue to bloom profusely all through the winter if kept secure from frost. This can be done by placing mats over the frames, or any other protection that will keep the frost out. Of course, in warm days the covering may be removed, so as to get the advantage of sunlight whenever possible. Professional men, who want to grow these on a large scale, would, of course, have some other little niceties of culture ; but, in a general way, this would be the course for an amateur to pursue.

CRAB GRASS.—Mr. Chas. Purzner, Jefferson City, Mo., read with great interest Professor Halsted's account of the weeds of New Jersey, in the April number,—and suggests that the crab grass, *Paspalum sanguinale*, might be properly included among the worst, in which opinion we are sure Professor Halsted will agree. This wretched specimen of vegetation, by the way, is believed to be an annual, which, if true, would enable the cultivator to get rid of it by weeding before it seeds. But is it an annual?

WEEDS ON LAWNS.—Mr. Morris Stroud inquires in regard to a small weed which is growing so profusely over his lawn as to entirely crowd out in many cases the grass which is so desirable. He thinks it may be a kind of chickweed. There is a kind of chickweed, namely *Cerastium viscosum*, the common mouse-ear chickweed, which behaves frequently in this discreditable way. But a weed which is still worse than this and acting in the same manner, crowding out the grass and eventually almost destroying the beauty of a lawn, is *Veronica serpyllifolia*, a kind of Speedwell. Unfortunately where the lawn mower is used and the grass cut very low, these two pests will intrude, and there is no way to get rid of them with absolute certainty. There is a very small-growing, tufty kind of grass called the sheep fescue, which is able to cope with these little weeds by reason of its not caring so much about being cropped low by the lawn mower. If this is sown thickly over the lawn, it may successfully dispute the territory with the weeds. This grass, however, will not thrive well in low or damp situations, preferring dry spots. Where there are roots of trees to help make the ground dry, this little grass will certainly crowd out all the other enemies.

WEEDS ON LAWNS.—A correspondent from Villa Nova, Delaware County, inquires for the best method of getting rid of the creeping Veronica, *V. serpyllifolia*, which is such a pest on lawns where the grass is cut very low. The only method we can suggest is to sow over the lawn the Sheep Fescue Grass, *Festuca ovina*. This is a dwarf grower, and does not suffer so much from being cut close by the lawn mower as other kinds of grass do. It is the only thing that we can suggest as an antidote against the *Veronica*. Perhaps Mr. Olcott, of Manchester, Ct., who is experimenting so intelligently with various kinds of grass, especially with a view to lawn culture, can make some additional suggestions.

THE SAGO PALM.—A cactus for the colored plate, and chapters on artificial-looking plants to harmonize with the more artificial features of gardening, make a notice of the Sago Palm timely. They grow with extreme slowness, and yet are long lived. There are specimens about our older cities that are over a hundred years, and are not more than from six to eight feet high. As ornaments for the front doors of houses with pretensions to great taste, nothing surpasses them. They are not common, because it is only now and then that they throw out offsets, by which they can be increased. The young plants like to grow out in rich garden ground in summer, and take kindly to potting in the fall. Old plants bring good prices, as much as $100 being often realized at

THE SAGO PALM.

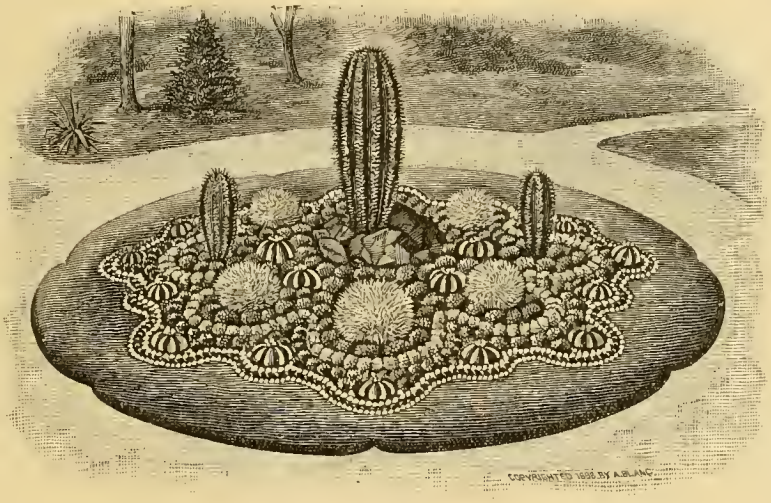
public sales. It is as good as a life insurance for one's family to grow up and leave behind large specimens, though possibly a large number would soon glut the market. They are interesting botanically, through being the link between ferns and palms. Old plants frequently have bunches of seed vessels in the heart of the plants, somewhat flattened and triangular, of the color of the horse chestnut; but always hollow. Its name is *Cycas revoluta*. Sago can be extracted from the stem.

HARDINESS OF EVERGREENS.—A correspondent from Central Iowa states that an opinion prevails that the Norway Spruce is not a particularly hardy tree. It is the case with the Norway Spruce as with almost all other evergreens of the coniferous family, that they are very liable to be injured by cold, dry winds, or by exposure to great heats. They are a class of plants that love the company of each other. In their native places they usually grow together in close forests, and when exposed to the fury of the elements, miss the protection which they get from each other. Where a quantity of them are planted together in blocks they will do probably as well in Central Iowa as where they usually grow wild. It is the whipping by the wind from which they chiefly suffer, and for this reason Pines are usually less liable to injury than the Spruces, as their branches being stiffer, they give more resistance to winds and storms. Pines will therefore do better standing singly by themselves in a general way than Spruces. We are quite satisfied there is nothing whatever in the climate or soil of Central Iowa to prevent any of the ordinary evergreens thriving and doing well there, provided they are set comparatively close together, or have a little protection from cold winds by having deciduous trees planted in among or near them.

LONGEVITY OF THE NORWAY SPRUCE.—A correspondent from Waukee, Iowa, states that an impression prevails in Iowa that the Norway Spruce is a short-lived tree, and that no good specimen could be found in the Union over fifty years old. If the said parties, who contend for this character, would visit Philadelphia, they will find thousands of trees over fifty years of age, that are not only just as beautiful as they ever were, but would be considered as among the most beautiful of all evergreen trees. If it fails elsewhere, it cannot be from any constitutional habit of short life.

WATER INJURIOUS TO PLANTS.—Sometimes there are ingredients in water which give it an advantage to florists ; at other times it is the reverse. It is stated that David Deans, a florist of Long Island City, has lost thousands of dollars during the past winter by roses and other plants rotting at the roots ; on the other hand, he found the water very beneficial to his carnations. Other florists in the same city have lost considerable, and it is said that $20,000 will scarcely cover the loss. The water is said to contain a very large proportion of saltpeter. On the other hand, water from the drive wells, of which there are a number in the city, are said to be waters which are beneficial.

DISEASES IN RHODODENDRONS. — Mr: R. Wright, School Lane, Philadelphia, sends us some branches of Rhododendrons which have been destroyed by a fungus, which operates in a similar manner to that in which the supposed fungus, which destroys the Pear tree, operates. It commences at any given point on the branch, completely girdling the bark and wood, and then spreads upwardly for many inches until it seems to wholly exhaust itself—the line of demarcation between the injured part and the part not attacked by the fungus being very plain. The whole upper portion of the branch then dies. We have never seen this manner of fungus attack the Rhododendron before. But there is similar destruction near the ground by the attack of the mycelium of some species of *Agaricus*, which first starts its growth on dead leaves or dead wood, and then attacks the healthy and living stem of the Rhododendron. Plants will live sometimes for two or three years that have been attacked in this manner, although the leaves have a more or less yellowish tint,—just as other plants appear when large portions of their bark have been destroyed. So far as this latter fungus is concerned, Mr. Charles H. Miller, the intelligent consulting landscape gardener of Fairmount Park, discovered that in cases where the stem bark was not destroyed, putting flower of sulphur around the roots of the Rhododendrons, entirely killed this fungus, and caused the plants eventually to resume their healthful green color. Just what will be effective in the case of this newly discovered fungus it is not clear to say ; but, as the various solutions of copper have been so useful in many varied cases of fungus attack, it is more than likely that some of these washes painted or sprayed over the stems of the Rhododendrons would destroy these fungus germs, and thus prevent their attacks.



A CACTUS GARDEN.--SEE P. 91.

SCILLA SIBIRICA.—A correspondent from Philadelphia, sends a specimen for name, which proves to be this beautiful blue, spring flowering bulb. It appeared in her garden as a waif. The common blue bottle as it is called, *Muscari racemosum*, is now extremely common as a weed around Philadelphia, where it is very much admired for its early blue, spring flowers. Children go to the fields and gather them by the handful with as much pleasure as later in the season they go hunting for violets. It is quite likely that this beautiful, blue squill, which is the English name for plants belonging to the genus *Scilla*, will become equally as common in time. As we must have weeds of some kind, it is just as well to have these handsome introductions as something of a plainer cast.

THE FRANKLIN TREE.—The *Gordonia pubescens*, as it has long been known in gardens, seem to have all been derived from plants originally introduced by Bartram from the banks of the Alatahama River, near Fort Barrington. There were possibly a number of plants in the locality when the Bartrams first saw it ; but every attempt to find any since Bartram's days has failed. It is only known now by cultivated plants. Closely allied species are found in Japan, and illustrates the close relation between the plants of that country and the Eastern United States.

IMPROVEMENTS IN THE GLADIOLUS.—The Gladiolus season will soon be on us, and aside from their beauty, there are matters connected with them of great interest to those who take pleasure in knowing about things, as in the mere pleasure which beauty affords. For instance, there is a notion, derived mainly from the mule among animals, that hybrids are usually sterile,—but the florist who has had to do with the improvement of flowers, knows that sterility rarely accompanies the hybridization of species from which so many of his classes of flowers are derived. The Gladiolus is a striking example of this. The original of our modern forms was itself a hybrid, raised

GLADIOLUS GANDAVENSIS.

at Ghent, Belgium, and called in honor of the place of its birth, *Gladiolus gandavensis*. This original hybrid is seen in the illustration.

But this proved abundantly fertile, and gave us the well-known race of garden gladioluses that have been so popular for over a quarter of a century. But even these have again been turned by the skill of the florist into distinct races,—so distinct that one might almost consider them as the products of different species than those which gave us gandavensis, of which the type known as Lemoinii is a notable illustration (see p. 86). The flowers are spotted like Rhododendrons,—but in addition the breadth and closeness of the flowers on the spike give the type peculiar characteristics.

DAMAGED BY FIELD MICE.—A Philadelphia subscriber, Mr. W. A. Selser, sends us the root and a large portion of a young apple tree which has been cut off during the winter by some rodent. He thinks it may be a mole. It is evident, however, that the damage was done by short-tailed field mice which, in winter time when other food is very scarce, frequently damage to a large extent young trees, similar to the manner in which this one has been injured. Hyacinths, and other Dutch bulbs planted in the fall are frequently liable to the same trouble. We have seen whole beds of roots entirely devoured. Where the visit of these rodents can be anticipated, it is easy to guard against injury by burying turnips, or other roots which have been steeped in or imperforated with Paris green in the places liable to form the runs of these creatures. They are easily poisoned in this way. Osage Orange hedges frequently suffer in the same way, and it is wise during the first year of planting to bury roots so poisoned along the line. It is complete protection against the ravages of the mice.

THE CAPE JASMINE.—The Cape Jasmine is one of the most desirable and odorous of flowers for cutting, not only on account of its delicious perfume, but on account of its petals having a thick texture, it will last a long time without withering. Unfortunately, they cannot be cut with the long stems required in these days by those who patronize the florists, and, as a consequence, are not grown to any great extent by Northern florists, as the bushes under glass would have to be cut too closely to make them profitable for cut flower work ; but in the South, where the bushes can be grown as hardy shrubs, there ought to be no difficulty in getting them in large quantities for the supplying of Northern florists, especially as the flowers can be packed very easily without any danger, or very little at least, of loss on the way. It is stated that in Florida the effort is being made to grow them largely for this purpose.

MEXICAN PRIMROSE.—*Œnothera speciosa*, a very pretty biennial which was originally found by Nuttall in Arkansas, has been a long while in cultivation and now has become wild in some parts of the Southern States, appears by cuts in advertisements to have been christened "Mexican Primrose," and under this new name will now doubtless have an enormous "run." It may not be this, but some close ally.

THE CACTUS IN GARDENING.—True taste in gardening requires certain harmony in parts, before the effect of the whole can be considered beautiful. A fashionable silk dress, beautiful in its place, would look horrid when on the back of a beggar whose other clothing might be in rags with dirt. So in gardening, statuary and rock work, beautiful in connection with artificial gardening, all have a depressing effect as often seen. In artificial gardening, plants with an artificial look, are particularly delightful. Those who have seen the grand effects produced by them in the hotel garden at Monterey, in California, will never forget the enchanting scene. In city gardens, they are singularly appropriate. Mr. Blanc, who has done so much to make the love of cactuses and allied plants wide-spread, arranged a bed of them which was a masterpiece of beauty as then located, and of which we append an illustration. Cactuses we are sure will enter much more largely into artificial gardening, than has been thought of in the past. (See p. 89.)

CULTIVATION OF WILD PLANTS.—A correspondent inquires how to cultivate such wild plants as the *Sarracenia purpurea*, the Huntsman's Cup, or pitcher plant. If one can get what is known as peat, chop it up, mixing it with perhaps half sand, it would be a very good soil for these pitcher plants. Where that cannot be obtained any kind of moss mixed with sand would do nearly as well. The pitcher plants planted in such a mixture thrive very well so far as soil is concerned; but they like to be where they can get their roots into water —a deep saucer continually filled with water, in which the pots containing the pitcher plants are set, makes the perfection of culture for these plants. In our own case where we have a little drain from a swamp in the form of a ditch, the pitcher plants in pots would be set in these ditches so that the water could be drawn upwardly from the little stream, or rather stagnant water, and they thrive admirably in such situations. This will apply to almost all kinds of bog plants. They like to be near water; but, as a general rule, do not care to have all their roots wholly underneath. When such plants are desirable in rooms a glass case of some sort has to cover them, in order to retain the atmospheric moisture.

FRUITS AND VEGETABLES.

LARGE STRAWBERRIES.—The paragraph in MEEHANS' MONTHLY, as to who has ever grown or seen the largest strawberries, is interesting some of our exchanges. One of our correspondents, Mr. L. M. Nuttall, of Nuttallburg, West Virginia, contributes the following note on the subject :—

"The note in your April number regarding large strawberries attracted my attention, and I concluded to send you a list of some strawberries grown and measured by me in 1887 and 1888. The plants from which these berries were gathered were set out in the spring of 1886, carefully attended to and not allowed to bear that year.

May 24, 1887,	Kentucky,	7	x 6½.
" " "	"	5¾	x 5½.
" " "	Sharpless,	5¾	x 5¼.
" 25, "	"	6½	x 6¼.
" " "	Kentucky,	6	x 6 .
June 5, 1888,	Jersey Queen,	6⅛	x 5½.
" 9, "	" "	6¼	x 5½.

I have raised none so large since, and I attribute my failure to the lack of some necessary element in the soil which the two heavy crops apparently extracted."

PRUNING PEACH TREES.—Mr. George B. Beecher, of Hillsboro, Ohio, states that the late frosts have killed the fruit of his peach orchards, and that it is desirable to have the trees compact, in order to occasionally protect them; and he inquires as to whether it would injure the trees to trim out their long and spreading branches early, or would it be better later in the season? As a general rule, it is a severe strain on all plants to have their branches cut off about the time that the young leaves are forming—even weeds that are particularly capable of continuing on under adverse circumstances, such as the Canada thistle, or horse nettle, will be entirely destroyed by having the young branches with the immature leaves cut completely away, and this is so well known to good cultivators that it is the practice usually employed to destroy inveterate weeds. It would be better, therefore, to prune the trees after the leaves have become mature than so early. We should say that the best time with the objects in view which our correspondent states, would be about midsummer.

PEACH DISEASES.—For at least a century, if not more, Peach trees in the United States have been to a greater or less extent in various localities subject to a disease known as the "yellows." This disease evidently exists in the tree for a year before it is noticed by the observer—the first indications being light, curled, and apparently blighted sprouts coming out from the main trunk—usually near the ground. The disease, therefore, evidently starts from near the ground and proceeds upwardly; the following year the whole tree loses its healthful, green color and assumes a yellowish tint, while many of the weaker branches die outright. Of recent years, another disease has appeared. In this case the shoots do not seem to elongate as they should do, which causes the leaves to crowd, somewhat in the manner of a rosette, at the end of the branchlets, besides having other diseased characteristics. It is a French disease, and the French name for it is rosette, which has been adopted in our country to designate this trouble. In the case of the yellows, the fruit ripens prematurely, in cases where the disease is not severe enough to destroy the whole tree, and it is said a similar precocity prevails in the rosette disease. As these diseases eventually penetrate the tree from the ground upwardly, no external applications of any kind have ever been found effective.

A CONTRACTED STRAWBERRY GARDEN.—In the "Gardeners' Monthly" some years ago, a plan is suggested for growing strawberries in back yards, or similar spaces, where the amount of room at command is considerably contracted, by getting a flour barrel and boring holes all over its surface about a foot apart—the flour barrel is fastened by a wire around the top, in order to avoid the possibility of its bursting apart—it is then filled with earth, and the strawberry plants set in the holes; in that way the whole surface of the barrel is covered by strawberry plants, which are said to thrive in the greatest perfection when planted all over the barrel in this manner. Aside from the interest of getting a large amount of strawberries in such a small space, it is stated that the beauty of a barrel so planted, when covered with its ripe, crimson fruit is one of the most ornamental features that could possibly be had in a back yard garden.

PECULIARITY OF MICROSCOPIC FUNGI.—It has been known for many years that copper sulphate in solution is a perfect security against various forms of fungus troubles which develop in the ears of grain. The smut, for instance, in various kinds of grass and on wheat, and the ergot which prevails in rye, is effectually guarded against when the wheat and rye are steeped in a solution before sowing. The spores of these fungi attach themselves to the grain, and when the grain develops the fungus affects the whole system, coming again to the surface in the seed for reproduction. It has since been found that although this treatment has been perfectly safe in various grains and other seeds, it is wholly ineffectual as applied to barley. The smut appears in the grain of barley when the plant is mature, notwithstanding the seeds have been so steeped. Just why it should be effectual in the case of all these, with this one exception, is one of the mysteries connected with the whole subject. Many eminent scientific men, among whom was the late Prof. Leidy, could scarcely believe that fungi of this character could enter the plant through the roots; but recently some botanists have discovered that the tops of root-hairs expand like mouths and admit the entrance of such substances as a spore of fungi, as well as in this way take up the mineral elements which are found in all plants. Some botanists, however, fail to find these mouths at the end of root-hairs, and for that reason the existence of these mouths is yet considered an open question. It may be remarked in this connection, that the steeping of seeds in hot water before sowing has been found to destroy the spores almost as well as the copper sulphate.

PEACHES FOR N. J.—A correspondent tells us, that in addition to the list of good and popular peaches which seem to thrive well in New Jersey, judging from his own extended experience, he would add the Ward's Late, Brown's Choice and Townsend's Late Red.

THE GOOSEBERRY FUNGUS.—It is said in the United States Journal of Mycology, that the cluster-cup fungus so destructive to cultivation of gooseberries, also attacks some forms of currant. It affects the leaves, and causes the fruit to become distorted and worthless.

BLACK KNOT IN THE PLUM.—The black knot in the plum is caused by the operation of a fungus as first ascertained by Prof. Peck, of Albany, who named it *Sphæria morbosa*. It has since been transferred to another genus and named *Plowrightia morbosa*, in honor of Prof. Plowright, a celebrated English mycologist. Its original host plant seems to have been the common wild choke cherry, *Cerasus Virginiana*. It has wandered from this to the common plum of our gardens, and frequently is very troublesome to the cherry trees. The *United States Journal of Mycology* states that it has also been found on apricots. The conductors of MEEHANS' MONTHLY have also had specimens sent to them this year in which it was found to be producing knots on the roots of young peach trees, attacking them near the collar of the young plant, and extending considerably to the main roots under ground. It is proper to state, however, that the specimens which were submitted for examination to Dr. George Rex, an eminent mycologist of Philadelphia, did not result in satisfying the Doctor absolutely that these large knots were caused by the same fungus, because they were not in the proper condition to determine that matter absolutely; but so far as the evidences went he had little difficulty in believing that the knots were the result of the same fungus.

THE CURLED DOCK.—Dr. Seaman says:—"I want to speak a good word for a plant that is usually classed among the weeds. I refer to the *Rumex crispus*, or curled Dock. This is an introduced plant, but thoroughly naturalized in most places along our Atlantic coast. Having a thick perennial root, it is one of the earliest plants to throw up its leaves in the spring, and these leaves form to my taste one of the best sort of greens that we have, cooked like spinach. It seems to me better than the colewort now so much eaten, and as it is perennial, it would be easier grown as a garden vegetable, and would come among the very earliest."

[Prof. Trelease, in an admirable monograph just issued, finds the curled Dock wild from Canada to Florida, and westwardly to Colorado and Utah,—and it is spreading in Vancouver's Island and California. One species, *Rumex Patienta*, called the Patience Dock, was once cultivated by Germantown gardeners, for the use of its young leaves as greens,—but unless taken when very young, were found too acid for most tastes.—CONDUCTORS.]

THE CARDOON.—Pursuing the topic touched on in former issue of MEEHANS' MONTHLY, the Cardoon comes to the front as a badly neglected vegetable. Possibly not one in a hundred know what it is. When properly grown and properly cooked, to many tastes it would be superior to the oyster plant or salsify, which in taste it reminds one of. It is of the same family as that esteemed vegetable, namely *compositæ*, and not far from the thistles. Its next neighbor, the globe artichoke, is better

CARDOON.

known, especially in California, or where French cookery prevails. The globe artichoke is *Cynara Scolymus*; the Cardoon is *Cynara cardunculus*. Possibly the greater labor to be given is against its culture. It has to be blanched like celery or it is bitter; but it does not like to be blanched with earth, so hay bands have to be employed. These are bound tightly around the plant, and the bleached parts in the centre of the leaves, trying to get through the mass of foliage to the light, is the part to be cooked. In French cookery, it is perhaps the chief favorite ingredient in many kinds of soups and salads.

BIOGRAPHY AND LITERATURE.

NATURE BLESSES ALL.

Nature, a mother kind alike to all,
Still grants her bliss at labor's earnest call
With food as well the peasant is supplied
On Idra's cliffs as Arno's shelvy side;
And though the rocky crested summits frown,
These rocks, by custom, turn to beds of down.
From art more various are the blessings sent;
Wealth, commerce, honor, liberty, content.

—Oliver Goldsmith.

Prof. Emory Smith.—Mr. Emory Smith, though a comparatively young man, has been long known for his interest in horticulture. When quite a lad, he determined to make the study of gardening as a science and an art, the great object of life,—and he spared no expense to advance himself in this knowledge. Settling in California a few years ago, he has found himself at the head of many a commendable enterprise in the interest of horticulture. He has now been selected as one of the Professors in the Leland Stanford, Jr., University.

It is difficult to decide which deserves the most hearty congratulation, the University or the young Professor,—it is so rare that the right man and the right place meet at the same time.

City Landscape Gardeners.—We noticed recently the death of Alphand, the celebrated gardener in chief of Paris. The London journals are bewailing that they have not such a horticultural genius for their city. They say they once had a Loudon and a Paxton, just suited to this work, but no one has succeeded them. It is probably the same there as in America; plenty of men exist, but the difficulty is in getting city officials to recognize their worth. Those who do not know what are the desirable points in the main to this character, and yet have to make the appointments, rarely find the proper man. It is generally a matter of luck when a city like Paris gets an Alphand. Good men abound—but the seekers are blind.

Cornelius Vanderbilt. His lawn at Newport:—"It used to be said that a fine lawn was an impossibility in this country, that the softness and verdure of an English lawn could never be reproduced outside of the moist and humid condition of Great Britain, and that in July and August our lawns are bound to lose their freshness; but Mr. Downing long ago showed that even in this country perfection in this respect is within reach of those who will patiently take the preliminary steps, and Mr. Vanderbilt's lawn is an example of the truth of this statement. In the first place, it has met a required condition by having a deep soil, the importance of which is obvious, when one remembers that common culture often has lawns not less than four feet (?). Mr. Downing has shown that a lawn which is well established on deeply dug soil will remain even in midsummer of a fine dark verdure, when upon the same soil untrenched, every little period of dryness would give a brown and faded look to the turf. The proper kind of grass it contains is a mixture of red-top (*Agrostis vulgaris*) and white clover (*Trifolium repens*), which he describes as hardy, short grass, that on the whole makes the best and enduring lawns for this climate. He has nothing, however, to say against the blue-grass of Kentucky. The proportion should be about three-fourths red-top, one-fourth white clover, and only frequent mowing and rolling will keep the lawn in proper condition."—*Appleton's Artistic Country Seats.*

William Cobbett.—This celebrated man, famous in American revolutionary politics, and in connection with American agriculture and horticulture of a century ago, was once employed in the Royal Gardens at Kew, according to Professor Hemsley, having walked some seventy miles when but a lad of eleven, with but thirteen cents in his pocket, in order to secure the promised job. He was a fine type of a self-educated man.

WM. SAUNDERS—BEET SUGAR.—Under the authority of the Honorable Minister of Finance of Canada, Director William Saunders of the experimental farm of Ottawa has made a report on the Beet Sugar industry, which is the most complete treatise on the subject probably ever issued. It is even better than the full account given in the *Encyclopædia Britannica*, because the history is brought down to date. All interested in the beet sugar industry should get it—and we suppose it can be had for the asking, as government documents can generally be.

WEEDS.—Prof. Byron D. Halsted, of New Brunswick, N. J., of whose excellent work in cataloguing the weeds of New Jersey, note has already been made, proposes to make a collection of dried specimens of American weeds to exhibit at Chicago, and has published a check list of such as he is already in possession of. He would be very glad to get help from others, who may find something appearing apparently rare as a weed; and this check list would aid friends in thus assisting him. He would be glad to send the list to any applicant.

LOUIS PRANG.—Charlotte Adams has recently given some account of the life and life work of Mr. Louis Prang, to whom the public is indebted for the first inception of the "Flowers and Ferns of the United States." The thought of this work originated with the late Mr. David Landreth, during the great Centennial Exhibition that was held in Philadelphia. Mr. Prang took hold of the idea, and the magnificent work we have referred to was the result. Miss Adams says, in the article to which we referred, that Mr. Prang was descended from a Norman-Huguenot stock, although a German by birth and training. At 18 years of age, as a lad in his father's calico-printing establishment, at Breslau in Prussia, he learned the fundamental principles of designing, engraving, color-mixing and printing, besides perfecting himself in chemistry. He traveled for a Bohemian manufacturer five years, through the manufacturing districts of Europe, with a view to establishing a factory in Bohemia. In order to achieve perfection in this line, he went through Austria, Switzerland, France, England and Scotland, working in various capacities, in order to obtain the desired knowledge. He left Germany in 1848, after the revolutionary movement in that country,—landed in New York in 1850, finely equipped in technical knowledge and experience. For several years he practiced wood engraving under Frank Leslie. In 1856 he opened an estabishment in Boston for lithographic work. The first plate that he sent out was a bouquet of roses in four colors. After the American war, the taste for beautiful pictures grew, and Mr. Prang entered the field in order to aid in the cultivation of this taste. Prang's American chromos soon became household words. The beautiful plates with which this work is monthly illustrated, also aid in making Mr. Prang's name a household word, at least to our readers.

DR. H. W. HARKNESS.—Dr. Harvey Wilson Harkness is one of the most eminent of living Californian botanists. *Zoe*, an admirable biological journal of San Francisco, has recently given a portrait with sketch of him. He was born at Pelham, Mass., 25th of May, 1821. Received a degree of medicine in Berkshire Medical College in 1847. He journeyed across the plains to California in 1848; retiring from practice in 1869. He has devoted most of his life since to travel and botanical science. For the last five years he has been president of the California Academy of Science.

DR. HALE—NORTH AMERICAN TEA.—The plant most generally used as tea by the North American Indians was a species of holly, *Ilex cassine*, now found somewhat common in the Atlantic portion of the Southern States. The Indian name was Youpon. Dr. E. M. Hale, under the authority of the Secretary of Agriculture, has prepared for Professor Vasey, the botanist of the department, a complete account of all that has been known in relation to it. It is Bulletin No. 14, of the United States Department of Agriculture, one of the most useful monographs that has been published by the department.

ST. FRANCIS XAVIER.—It is said that the tomb of this great man at Goa is the finest specimen of mural art in the world. The decorations of the tomb represent incidents in the saint's life. Nothing in India, as a masterpiece of art, is said to exceed it,—and some say nothing in the whole of Asia.

GENERAL NOTES.

STREETS FOR THE FLORIST.—In Hartford, Connecticut, there is a succession of streets named as follows: Edward, Smith, Grand, Flower, Garden. Edward Smith ought certainly to have a grand flower garden to occupy so many streets.

CORRESPONDENTS.—Friends frequently send us newspaper slips, concerning the deaths of prominent horticulturists, or of some matter which may be of interest to the generality of our readers, and photographs of trees, gardens or flowers. For all these we are very much obliged, and trust our readers will continue to favor us with them.

A BUSINESS MAXIM.—A fruit grower of Florida complains of the slowness of many of the horticulturists of that section of our territory, and contends that their chief maxim must be "never to do anything to-day that you can put off until to-morrow;" but, if he had the wide experience of this magazine, he would find that this veneration of such a maxim is by no means confined to Florida—it is universal. Judging by our subscription list, Florida is not far, if at all, behind other sections of the Union in desiring to advance.

CALIFORNIA WILD FLOWERS.—Visitors to California, of whom there are many among our subscribers, often regret their inability to get collections of the wild flowers which are found in the territories which they hurriedly drive through. Collections are usually made, but, of course, not near all that could be obtained if there were longer stays. Professor George Hansen, who is on the line to the Mammoth Tree Groves, has undertaken to supply in part this want, and will make collections during the coming season, of the plants in that portion of California. They will be put up in sets of about three hundred species, and will be sold at the usual rates charged by botanists of $10 per hundred. Mr. Hansen's address is Jackson, Amador Co., Cal.

THE NEXT PLATE.—A correspondent says, Why do you not give us more colored plates of Ferns,—and another says, When will the beautiful and curious orchids get a show? It will have been noticed that the subjects of the plates are taken from as many varied types of families as possible. We hope the whole flora of the United States will be illustrated in the pages of MEEHANS' MONTHLY, all in due time. There will be a fern, however, for the next illustration, *Asplenium montanum*, which, if not the showiest of American ferns, is decidedly one of the most interesting.

A VICIOUS SYSTEM.—A well known firm, dealing largely in peach seed, received an order from a California nurseryman, who got an idea that Tennessee natural peach stones, would make better trees for Californian peach orchards, than the in-and-in bred peach stones of California. The disease commission refused to let the owner have them, unless the shipper would make affidavit as to the exact locality where the stones were grown. Affidavit was made that they were truly Tennessee seed from ungrafted trees,—but as the collections had been made from different localities, the exact spot which produced these stones, could not be truthfully stated. This was not satisfactory, the peach stones were burned, the customer would not pay the bill for the stones, and the railroad company came on the shipper for the freight as well; he lost the whole bill. If the shipper had "lied just a little" and given some little orchard in Tennessee as *certainly* the spot, it would have been all right, but what is to be thought of a system which offers a premium to the unscrupulous, and shuts out the honorable dealer? It is a wonder the Eastern nurseryman himself is not shut out from California, for fear some terrible bug get through on his clothing, which has caught on from the trees on his grounds. The regulations usually inquire the makers more than the enemy.

ASPLENIUM MONTANUM.

MOUNTAIN SPLEENWORT.

NATURAL ORDER, FILICES.

ASPLENIUM MONTANUM, Willdenow.—Fronds small, ovate-lanceolate, pinnate; pinnæ few, petioled ovate or triangular; the lower ones pinnatifid; the upper ones incised; divisions toothed or serrate; fruit dots very short, the basal ones often with a double indusium. (Chapman's *Flora of the Southern United States*. See also Gray's *Manual of the Botany of the Northern United States*, Wood's *Class-Book of Botany*, Williamson's *Ferns of Kentucky*, and Eaton's *Ferns of North America*.)

Among the great pleasures of the botanical collector is the hope of finding some rare plant in a new locality. During the summer of 1880 the writer formed one of a small party collecting through the southern Alleghanies, and the prospect of finding *Asplenium montanum* somewhere on the trip, entered largely into the pleasures of the occasion. We had journeyed through North Carolina and Tennessee, along the Swananoa, Catawba, and the French Broad rivers, peering also into the banks that lined numberless small streams that fed them,—but still the common question "shall we find *Asplenium montanum?*" remained unanswered. We had been many weeks journeying northward, and had reached the Greenbrier in West Virginia, near to its junction with the Kanawha; and, finding good "botanizing" at the little village of Hawk's Nest, were very happy. As we tramped on, sweltering under a hot summer afternoon's sun, one of my companions, Professor T. C. Porter, would stop every now and then under some huge rocky bluff, and query, "what would you say if we were to find *Asplenium montanum* this afternoon?" But though our portfolios opened frequently, it was not for the little fern. At length the sun went down behind the hills, and fearful that we might have miscalculated the distance of our lovely mountain path, we hurried away from the lengthening shades towards our quarters by the river. As we happened to go under the deep gloom of a huge projecting rock, extending half way across the path, the writer remarked, "If those ferns were not so large we might take them for *Asplenium Ruta-muraria*." In an instant Professor Porter was upon a ledge, and "It is *Asplenium montanum!*" made us both forget, for the time being, the waning sun.

Some of the specimens were unusually fine,—one of the best having been selected for our illustration. In the clefts of the rock in which it had its home, it was wholly guarded from rain by the overhanging projection,—but as the exposed sides were protected by tall growing shrubs, there would always be a cool and comparatively humid atmosphere about the plant, which no doubt furnished it with all the moisture needed. It grew so tightly in the little crevices of the rock, that it was with great difficulty we could get out the roots; and only patience, and the risk of breaking the points of our knifes, secured a few good specimens. It is well that we had the patience, for it taught us that the roots were rhizomatous and not "tufted" as stated in most botanical descriptions, and as represented in the figure cited in Mr. Williamson's work. Without however we had the success in getting out the complete plant which we were fortunate in achieving, it might be easily taken for a tufted fern, for the rhizome or creeping root stock seems permanent, and short buds come out from along its surface, forming tufted offsets, and make the old rhizome appear clothed with leaves along its whole surface. Describers usually say the frond is from two to five inches long, and in this they do not include the stalk. It will be seen that the frond, as thus restricted, is fully five inches long in our illustration, showing it to be one of the finest specimens the collector is likely to find. Mr. Williamson in his *Ferns of Kentucky*, remarks, "it is quite common in Kentucky, especially in the mountain regions, though my best specimens were obtained at Big Clifty, Grayson County. A single plant had more than fifty fronds, each six or seven inches long, and Prof. Hussey, formerly of the Kentucky Geological Survey,

has specimens in his collection over ten inches in length." Remarking on this, Prof. Eaton says in his *Ferns of North America*, "Mr. Williamson speaks of fronds 'six or seven' and 'ten inches,' but he probably includes the stalk with the frond." The views indicated by Prof. Eaton, are also held by many American botanists, and the idea of a frond is confined to the leafy portion,—but good European botanists while using "stipe" and "frond" in a restricted sense separately, yet speak of the whole growth from the rhizome or stem, in a comprehensive sense as a frond. Mr. John Smith in his *Historia Filicum* says particularly, "the leafy part either tapers down to their base, such being termed sessile, or borne on a semi-cylindrical footstalk, but which is not special, being an integral part of the frond;" and he speaks of some scales at the base of the stipe, as a fern having no scales "except at the base of the fronds." It is well for the student to note that these terms may have different meanings in order to understand accurately what he reads.

Michaux was the first botanist who seems to have noticed it in the United States. He found it, as stated in his *Flora of North America*, issued in 1803, as growing in the "mountains of Carolina." But he supposed it to be the same with a well-known European species, *Asplenium Adiantum-nigrum*, — it having been called simply *Adiantum nigrum* by the old European botanists, and the name retained for the species by Linnæus on the reformation of botany under his bi-nomial system. Willdenow, however, who published the fifth volume of his *Species Plantarum* in 1810, published it there as *Asplenium montanum*. It is by no means certain however that though credited with the name he was the first to perceive the distinction. The American botanist, Muhlenberg, issued a catalogue of the plants of North America in 1813, and includes *Asplenium montanum* therein, and it is quite likely Willdenow described from Muhlenberg's named specimens, as he so often acknowledges in his work he did. The name *montanum*—the "mountain" spleenwort, would not seem very appropriate unless we remembered the early association of the species with the European species, for there are other *Aspleniums* just as much confined to mountains as this one. But the *Asplenium Adiantum nigrum* of Europe is found at comparatively low elevations,—and this species is a "mountain" species chiefly in comparison with that one with which it was formerly confused, and in this connection the name is quite appropriate.

It appears not to have been known out of the special districts referred to by Michaux till some twenty years afterwards, when Von Schweinitz detected it at Bethlehem in the northern part of Pennsylvania, since which time it has been found in other parts of the State by Professor Porter, Diffenbaugh, and others,—as well as further north to Ulster County, New York, by Mr. Denslow. Southwardly special locations are now comparatively numerous, and Chapman writes of it as being found so far south as the mountains of Alabama. There are doubtless numerous spots where this fern grows to perfection, which have not yet fallen under botanical eyes.

For the convenience of the picture, the fronds are represented as somewhat erect, and are made still more so in Mr. Williamson's illustration. But in the location at Hawk's Nest the plant had a tufted, nest-like appearance, with the fronds spreading outwardly, which added very much to its graceful character; but it is in its greatest beauty when the fertile frond is nearly mature. Then the golden masses of sporangia, contrasting with the vivid green, give the plant attractions possessed by few ferns.

As already noted it was once confused with the European *Asplenium Adiantum-nigrum*, but besides being a smaller plant, it differs in the absence of the shining black stipes, and it has the segments of the frond more obtuse than that species. It is intermediate between that and *Asplenium Ruta-muraria*, the latter a true American as well as an European plant, but always very much smaller than our species.

The genus *Asplenium* is a very large one being found all over the world. There are probably three hundred very good species, besides some supposed ones that are perhaps but mere varieties. They are divided into sections according to the divisions of the frond. Some have fronds of one piece,—wholly undivided,—and others are merely but once pinnate. The mountain spleenwort belongs to the section which has the fronds twice or thrice divided or pinnately parted.

EXPLANATION OF THE PLATE.—A full sized and extra fine specimen from Hawk's Nest, West Virginia.

WILD FLOWERS AND NATURE.

THE MEADOW BROOK.

There is a fountain of the purest wave:—
It ever floweth full and freshly on,
Laughing beneath the fairest light of heaven,
And chiming, like the tender voice of birds,
Within a dewy thicket, when the morn
Comes forth in beauty, and the winds awake
To sip the moisture in the lily's bell.

—PERCIVAL.

FLOWERS OF THE INDIAN RUBBER.—A correspondent sends some buds taken from the axils of the leaves of an Indian Rubber, which he took to be an abortive flower bud; but, on cutting open appeared more like the immature fig. This is all right, because the plant usually known as Indian Rubber is really a fig—that is to say *Ficus elastica*. These little buds frequently appear in Indian Rubber plants: but we have not known them to perfect themselves in our country. We should be glad to know whether this does occur at times under cultivation. An examination of these buds is very interesting to those who would understand the structure of the fig. We may say in common language, that the fig is a bunch of flowers turned inside out. The flowers of the fig are all on the inside of this bud—some of them are purely staminate and others pistillate. It is a frequent subject of controversy whether the common garden fig has fruit wholly of one kind or wholly of the other kind. We are quite sure, notwithstanding the opinion of some botanists, that we have found both the barren and fertile flowers in the same fig; and this will be found occasionally in the fruit of the *Ficus elastica*. When examined with the lens, these little flowers inside the fig will be found very beautiful and well worthy of study.

BRASENIA PELTATA.—*American Gardening* notes that the leaf stems, and young leaves, before they expand, are eaten as a salad with vinegar in Japan, where the plant is indigenous as it is also in the northeastern portion of the American continent.

CENCHRUS TRIBULOIDES.—In reference to a paragraph in the May number of the MONTHLY, that this burry-fruited grass was brought northwardly by soldiers from the battlefield of Palo Alto, it might be worth noting, it was not intended to signify that this grass was introduced solely in this way, but simply as one of the ways by which it was introduced. Several correspondents call attention to the fact that it has been long domiciled in Virginia, Maryland, and even New Jersey, although not seeming to spread so much as it does further south. One correspondent, Mr. Ellis B. Noyes, of Lewistown, Pa., writes that it is becoming a great pest in eastern Kansas, and that he has seen a small patch of it on a railroad bank at Fort Edward, N. Y., a place about fifty-six miles north of Albany. As it is undoubtedly a sub-tropical grass, it may not thrive rapidly when introduced far north; but the items received, show that it is capable of holding on with considerable persistency, even when far away from its tropical home.

TWO PLANTS FROM ONE SEED.—Mrs. C. Lewers, of Franktown, Nevada, sends a seed which appears to belong to some ally of the common clot weed, *Xanthium*, which has two perfectly developed plants pushing from the one seed. This has probably never been noticed in this class of plants. It often occurs in the Red Oak, *Quercus rubra*; as many as three will often come from one acorn. But it is in the orange that this prolification is the most common. An indefinite number of plants come at times from one seed.

CYPRIPEDIUM SPECTABILE.—This lovely native plant will soon have the sad story told of it that is told of many of the tropical epiphytal orchids, that it is being rendered scarce by the demands of European florists. In the old world they have found out the way to cultivate it easily, and thousands imported from the United States are sold annually.

GIRDLED PINE TREES.—Few subjects attracted more attention among our exchanges than the picture of the girdled pine tree sent to us by Mrs. Ross Lewers, of Nevada. It was scarcely believed that any tree could live, girlded in that manner, for more than a year; and indeed it would seem that few other classes of trees besides the pine have this peculiarity. Notwithstanding the numerous references made to that paragraph no one has yet called attention to any other tree than the pine that would live in this manner. Prof. William Munson, of the Maine State College, at Orono, Me., now sends a sketch of a white Pine tree which has been girdled in this way. He has not been able to learn how many years ago it was since the girdling took place; but we can readily see by the engraving that the upper portion of the tree has double the number of years of growth of the lower. We should think it safe to say that at least six years have passed since the tree was girdled. It continues to grow and increase in size above the girdled part, but the lower part does not increase. Prof. Munson says that there appears to be no difference, so far as color of the foliage is concerned, between the health of the upper and lower portions. So far as we know, no physiologist has yet attempted to offer an explanation as to the manner in which the upper portion of the girdled tree obtains its food.

GREAT PRODUCTIVENESS OF CICUTA BULBIFERA.—Prof. E. J. Hill, Englewood, Illinois:

"Though this plant is frequent in the swamps east of Chicago, it generally bears but a few bulblets. Last September, while examining those growing by the margins of Lake George, near Whiting's, Ind., great quantities of bulblets were found upon them. Several acres of ground were covered by the plants, sometimes so completely that little else was visible. Some of them in addition bore considerable fruit. They were mostly small and slender, due partly to their crowded condition, but some standing apart and having ample room for branching had a spread of three feet. On some of the branches of these large plants the bulblets were counted, and an average of eighty to one hundred found. There being at a moderate estimate from twenty to twenty-five branches on such a plant, they would give it from 1600 to 2500 bulblets. Doubtless 3000 could have been found on some of the largest by actual count. When walking among the smaller plants, which were proportionally as well covered, the bulblets were brushed off like seeds and fell upon the ground. A large part of the energy of the plants seemed to have been given to the production of these bulblets, which take the place of seeds, which they do not often perfect, for the leaves were greatly reduced and dwarfed. On ultimate branchlets they were nearly absent, a mere stump or petiole in the axil of which was a cluster of little bulbs. The plants also had a singular and pretty appearance in one respect, for the purplish bulblets were beginning to grow before falling off, tufts of tiny leaves, pedately parted into three to five lobes, bursting from their apex.

[The production of bulblets in some of our wild and cultivated flowers, is a subject that has not been fully investigated. The *Cicuta bulbifera* is not common in the East, yet one would suppose from its ready production of bulblets it ought to have a good chance for distribution. The only locality the writer remembers is on the west bank of the Schuylkill below Norristown, along the line of the same river.

Lysimachia stricta, abundantly bearing bulblets, is very common, and is believed to be distributed widely by their aid. But the belief is that these bulblets are not produced till after the plant has flowered and seeded. The points need further examination.—CONDUCTORS.]

ERADICATION OF WILD FLOWERS.—The demands of the florists often lead to the total destruction of habitats for some beautiful wild flowers. This seems to be especially the case with some of the orchids of Central America. One of the most beautiful, cultivated as *Odontoglossum crispum*, sometimes called *O. Alexandræ*, has so nearly disappeared that it is rare that the florists now receive any from their collectors. This is true of other species.

THE APPLE OF EDEN.—A correspondent, B. Shoemaker, 2052 Mervine street, Philadelphia, desires to know how authors come to conclude that "the tree of knowledge between good and evil was an apple tree." It is but fair to state that controversies are continually going on as to every incident connected with the account of the creation as given in Genesis, and one is no more likely to reach a positive conclusion on this apple question than on any other. To some everything is literal, — to others it is an allegory,—while others take it as being wholly mythical. One might say, however, that the word, apple, in ancient languages did not always mean an apple, as we understand it. Any luscious fruit was considered an apple. We have the same habit in these days; we speak of the love apple, the oak apple, the thorn apple, and the French even make the potato the ground apple; yet these are not apples that the pomologist cares for. It was just so in the olden times; in the song of Solomon the Queen of Sheba is made to say of Solomon, "As the apple tree, among the trees of the wood, so is my beloved among the sons of men." This could not be said of our apple tree, which is a low bushy affair, and would compare with none of the trees of the woods, and we suppose that must have been true in the Queen of Sheba's time. Again the Queen of Sheba says, as if addressing Solomon, "Comfort me with apples," and which expression surely would not refer to the apple as we understand it. All that can be said on this question is, that the apple of our orchards is the oldest fruit known to have been cultivated; all other fruits followed long after. Even the uncivilized men, the early Adams of the race, knew probably no fruit but the apple. Commentators on the account of the Creation and the Garden of Eden, have therefore decided that whatever fruit might have been intended, the apple is the only one that can be recognized as in all probability that one.

ORIGIN OF FERNS.—An opinion prevails among some botanists that mosses existed on the earth before ferns,—and that they are therefore the parents of this large tribe. Accepting this view, some have gone further and adduced facts to show that the pretty class known as the "Filmy ferns," of which the genus known as *Hymenophyllum* is the type, was the first that was developed,—and are therefore the oldest class in the early appearance of ferns on the earth. This would carry the existence of ferns back to a very remote period, Principal Dawson of McGill College, Montreal, considers our present sensitive fern, *Onoclea sensibilis*, as having had an existence of at least 100,000 years. He finds fossil remains of this fern, just as we find the plant to-day, in strata which geologically he thinks may be considered that old.

WILLOW WOOD.—The large timber-furnishing willow, known as the white willow, *Salix alba*, has never been of much commercial value in our country; but in the old world good specimens are highly appreciated. We read in an English paper that one tree which was sold as it stood on the ground, leaving the purchaser to cut and prepare it for lumber, brought the enormous price of $230, and a large number of others brought similar prices. Willow wood and ware is of much more extensive use in the old world than with us. One of the leading articles made from this willow is cricket bats, of which large numbers are exported from England to all parts of the world, especially to Australia and America. The wood is very light in comparison with its toughness and general strength.

VARYING TINTS OF SPRING FOLIAGE.—We all know how varied and beautiful are the autumn colors of the leaves in our woods and fields, but it has not been generally noted, what is equally true, that there is much variation in the tints of young spring foliage, though of a much more delicate character than that which glows in the fall. Poets, however, who see things not given to common mortals to behold have perceived this.

Chaucer, the famous English poet of some five hundred years ago, thus describes an English wood in early spring:—

Lo! here be oakis grete, streight as a line,
Under the which the grass, so fresh of line,
Be'th newly sprung—at eight foot or nine.
Everich tree well from his fellow grew,
With braunches broad laden with leaves new,
That sprongen out against the sonne sheene,
Some golden red and some a glad bright green.

HYBRIDIZING THE RASPBERRY AND BLACKBERRY.—It is only a short time since it was supposed to be possible to cross the raspberry with the blackberry; and ever since Luther Burbank of California had in 1883 succeeded in crossing the Red Antwerp raspberry with the Pacific coast dewberry (*Rubus ursinus*) it has often been stated that no practical results had been obtained.

The middle figure in the accompanying cut. Shows a leaf and some fruit of one of Mr. Burbank's later hybrids which bears large and perfect fruit in the greatest abundance, It is also remarkable that the hybrid should ripen its fruit several weeks before either of its parents and to excel them much in productiveness and size of fruit though retaining the general appearance and combined flavors of both; the blossoms are large and handsome and are followed in an incredibly short time with the large glossy black fruit.

MOSQUITOES.—A correspondent suggests that one of the best methods of getting rid of mosquitoes is to stock the ponds and lakes with fish—carp is especially named as being one of

About ⅓ natural size.

PACIFIC COAST DEWBERRY. *Rubus ursinus.* | THE HYBRID FORM. | SIBERIAN RASPBERRY. *Rubus cratægifolius.*

ripening in California with the earliest strawberries and before our well-known standard raspberries and blackberries are in bloom.

A leaf and fruit of the California dewberry—the pistillate parent—is shown at the left; and the staminate parent, the Siberian raspberry, *Rubus cratægifolius*, at the right. All are about one-third natural size.

Curiously all the other seedlings from the same cross, though varying greatly in foliage and growth between the two parents, were barren, though most of them bloomed abundantly, the blossoms of many appearing to be perfect.

the best fish to feed on the larva of the mosquito. So far as this goes, it is undoubtedly a valuable hint; but, as the egg of the mosquito comes to maturity in a very short time, any small hole, even a cow track, in which water may lie for a week, is sufficient to bring forth the insect to perfection; so that after we get them from the lakes and ponds, there is generally enough left from swampy places in marshes to stock the country nevertheless.

Dragon flies feed on mosquitoes, and do no harm in any way.

GENERAL GARDENING.

THE BLESSED TREE PLANTER.

He who plants a tree
He plants love ;
Tents of coolness spreading out above
Wayfarers, he may not live to see.
Gifts that grow are best,
Hands that bless are blest ;
Plant ; Life does the rest !
Heaven and earth help him who plants a tree,
And his work its own reward shall be.

—Lucy Larcom.

Akebia quinata.—This was regarded as a greenhouse plant, and was introduced to America as a greenhouse plant from the English nurseries by Mr. Robert Buist, of Philadelphia, about forty years ago. By an accident a plant was left out in Meehans' Germantown nurseries and found to be hardy,—and since that time it has been slowly making its way into public favor. It is among the earliest to flower, and the purple blossoms have a delicious perfume. The quinate leaves are almost evergreen, and in the South they are wholly so. The plant fruits only occasionally in America, but why this shyness is not accurately known. In Japan the fruit, which is near our Papaw in appearance, is eaten. The writer, who has partaken of one, can only say if asked what he thought of it that "there is no accounting for tastes." The *American Garden* figures it at p. 128,—and it is a plant well worthy of this distinguished honor.

Blue Hydrangeas.—Miss Caroline Granger states that Hydrangeas exposed to the full sun, pink in the morning, would be quite blue by three o'clock in the afternoon, provided the plants so exposed were allowed to suffer for want of water. This accords with the view expressed in Meehans' Monthly, that the change of color in the Hydrangeas is rather a vital than a chemical process.

Arum Lilies.—This is the common name in England of what we know in America as Calla Lilies.

Destruction of Insects by Oil.—Insects generally breathe through special pores in various parts of their body, and if these pores are closed by oil they are suffocated. Any one may test this by dropping sweet oil on the thorax or back of a wasp ; it very soon dies. For this reason oil has been found one of the best things to use for the destruction of insects. Unfortunately it is difficult to spread it properly over plants. At one time oil was spread on with water, and the syringe made to draw up a little water and oil together as the syringe was taken from the vessel containing the liquid, but this has never had a great deal of practical value. It is not generally known, at least it was left to a correspondent of the *Gardeners' Monthly*, Mr. A. D. Brown, of Princeton, N. J., several years ago to show that by the use of chalk or soap, or other substances, oil and water could be made to amalgamate, and in this way make a safe and effectual wash, although it still has to be stirred up continually while being applied. A wineglassful of oil to a gallon of hot water, with about one-half a glassful of soft soap mixed together will make a wash of this kind. There is nothing better than this for scale on Lemon trees, Oleanders, and indeed, by the aid of a fine syringe, on almost any insect-infested plant.

Branches of Douglass Spruce.—A correspondent sent us some Spruce branches for name, which we supposed we replied to, but the card seems to have been sent to a wrong address. If the right person reads this paragraph, he will understand the name of his Spruce tree to be *Abies Douglassi.*

Matrimony Vine.—Professor Sargent says that the Lycium under cultivation generally, which is supposed to be the European species, is really the Chinese *L. Chinense.* Though an old plant in gardens, it is very effective in many situations.

FAST GROWING TREES.—In the "Tales of the Genii," a set of old Persian stories, a Dervish is represented as entertaining a Turkish Prince in his garden, who sat amidst the vigorous thriving trees, under the shade of which they proceeded, and through which the glorious oriental birds sported and built their nests, was struck with astonishment when told by the Dervish that they had all been raised from seed thrown by his own hand. The Sultan it appears was one of those who could not "afford to wait," and had a large number of trees of immense size transplanted to his garden, and they wilted and withered with every morning's sun. The Prince is represented as being in a rather lachrymose condition, as he reflected that while his big trees would grow no bigger, those of his friend were adding to their strength and vigor with each returning day. There is a good moral to this story,—not that big trees will not transplant as well as small ones if they are healthy, and properly removed,—but in the selection of poplars and other very poor kinds of trees in preference to a little slower growing but beautiful trees merely because the planters want in eight or nine years what a pretty tree would take ten to do.

WISTARIA MULTIJUGA.—A correspondent inquires whether this new Wistaria is to be considered a distinct species or only a form of the old Chinese Wistaria. This is difficult to decide. As to what is a species or what is a variety, is simply the opinion of an expert botanist,—there is no dividing line in nature. At first sight one might suppose it ought to be placed as a distinct species. The Chinese Wistaria has but five leaflets in the leaf, while the multijuga has eight pairs, deriving in fact its name from this character. The raceme is very long and slender, sometimes reaching to three feet in length—double the length certainly of the best Chinese Wistaria. If these characters were always found permanent in wild plants, botanists would consider them most likely as distinct species; but the remarkable fact is, that the double Chinese Wistaria, about which there is no question as to its parentage, has leaflets varying from five to eight pairs, and this would indicate that the number of leaflets was of no great import in deciding the distinctions between species. Our own opinion would be, that the Wistaria multijuga, found wild in China, would be a distinct species, while in the light of horticultural experiences it would simply be regarded as a variety.

GRAFTING A SEPARATED STEM.—In an early number of the magazine, a Philadelphia correspondent referred to a large Ampelopsis, the main stem of which was cut across by a mistake. As the plant was growing over the church of St. Marks, and was a beautiful object, it was desired, if possible, to save it by grafting the tree together. Miss Caroline Granger, of Cartersville, Ga., writes in reference to this paragraph, that in such cases if the two separated portions are drawn tightly together by fine copper wire, so that they cannot well contract, and covered with a good sized pad of soft cotton cloth, it would be made to unite. She states that a chopped Quince bush last autumn was treated in this way, and has united as well as if no hatchet had gone clean through its main stem.

GREEN ROSES.—Some of our contemporaries are interested in the existence of a green rose. This has been a very well-known plant in the vicinity of Philadelphia for probably a century. There is no difference theoretically between the petals of a rose and a rose leaf, and the transformation of one to the other in nature is very easily accomplished. A green rose, therefore, is nothing more than a rose in which in forming the flower, the rose has persisteutly refused to allow its leaves to be transformed to petals—they still continue as leaves. The petals of the green rose are, therefore, nothing more than green leaves. Outside of its interest as showing the relation between leaves and flowers, there is no other interest in the green rose. Certainly it has no beauty.

PRESERVING WILD FLOWERS.—C. F. Saunders says that the roots of the Anemone and other plants in flower, brought home to adorn the vase, can be planted in flower pots after withering, and will then beautifully flower the following spring,—"and as for quaker ladies, *Houstonia cærulea*, I think we kept a sod-full of them, in the house a year or two ago, for over a month."

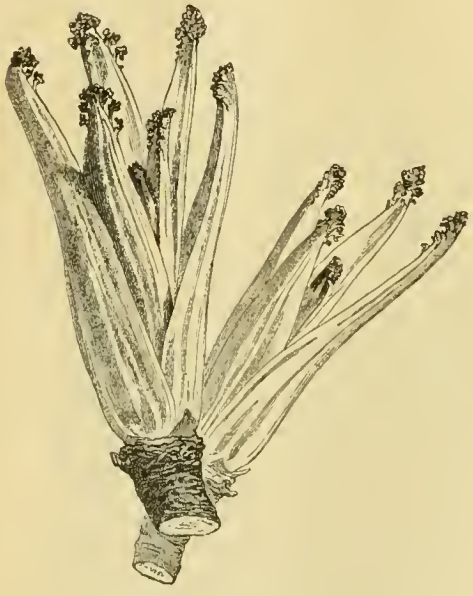
Our Subscribers' Gardens. Residence of Joseph C. Roop.—We present with this an illustration of the residence and grounds of one of the early friends of our magazine, Joseph C. Roop, of Stroudsburg, Pa. One would hardly imagine such beautiful buildings high up in the Allegheny regions. The slope of the lawn is particularly striking, and there are few residences that have such tastefully arranged grounds around them. Mr. Roop is a rare lover of beautiful trees and plants, and possibly few amateurs in the States have a finer collection than he has. Notwithstanding the high elevation, Rhododendrons and other beautiful things are found to thrive in great perfection.

RESIDENCE OF JOSEPH C. ROOP, STROUDSBURG, PA.

Label Wires Growing in Trees. — For many years it was recommended that zinc labels should be folded simply around a branch—the idea being that, as the wood grew, it would expand the label and prevent cutting into the bark. This has been found by experience to be an error—although a piece of flat zinc forming the end of a label, simply rests on the upper portion of a branch, it will not be pushed away by the new growth—the new growth will grow over and around it. There is, in fact, no pushing power in the growth of wood—the cells simply divide and form new cells, growing and overlapping that which is aside or around it. There is only one way to keep any label, or wire attached to a label, from growing into the bark of trees, and that is, by going over every year or so and lifting them, so as to see that there is plenty of room for the germination of the wood cells.

The Manzanita.—A box of flowers of this beautiful arbutus, which came to hand on the first of May from a friend in Western Nevada, brings it in contrast with its humble relative, the Trailing Arbutus in flower at the same time in the East. Certainly the great glow of purple, sweet scented blossoms the Manzanita shrubs present, must make a Nevadean liable to forget the Eastern friend of early youth,—but for all this the Epigæa has a charm in the endless variety of form and color, which it is supposed the Manzanita does not possess.

RAISING CORK IN CALIFORNIA.—Col. Bidwell, of Chico, one of the most enterprising of the citizens of California, finds that the tree which produces the cork in Spain, thrives remarkably well in that part of California, and he has already demonstrated that the cork raised in that part of the world is quite equal to that which is sent here from the old. There is no reason why this tree might not be planted in large quantities, and be found to be one of the most profitable industries of that section of our country.



SEA KALE.--SEE P. 108.

BIRD'S FOOT VIOLET.—Mrs. Mary Wager Fisher notes, that the Bird Foot Violet, *Viola pedata*, does not bear transplanting well. Moved with extreme care, with the earth and all from its native soil, it does not grow. This is probably not the usual experience. As a general rule it thrives very well transplanted. Possibly it has been taken from shady places to the sunnier spots in gardens; and if taken from the open ground it might thrive better. There is a form in gardens in which the two upper petals are crimson, the lower three light violet, giving it the appearance of a pansy. This is frequently grown in gardens, and seems to show no dislike to the artificial conditions.

FAILURE OF HYACINTH FLOWERS.—A correspondent, from Riverton, N. J., notes that Hyacinths, Tulips, Narcissus and other bulbs pushing up to grow, seemed the past spring to have the flowers blighted off, few of them coming to any perfection. Strange to say, we have had the same complaint from many quarters this year, and have no idea what can be the matter with them. Some which were brought personally to our attention, had the appearance of plants that had the ends of their leaves frost bitten after having started to grow. Possibly others may have had a closer experience, so as to give better indications in what the trouble lies. A "basal fungus" has been noted as playing sad havoc with bulbs in Europe.

COLORADO BLUE SPRUCE.—This beautiful spruce, *Picea pungens*, is not always blue. It varies much in tint, as well as in other characters. In the old world they are selecting marked varieties and giving them special names. These are propagated by grafting so as to preserve their distinctive characters. One of these varieties has been named in Germany "King Albert of Saxony." We may have a literature of Coniferæ one of these days, as extensive as the literature of Roses.

KOLREUTERIA PANICULATA. — Mr. Chas. H. Miller very properly remarks that for this region we place the blooming of *Kolreuteria paniculata* (see page 75) a month too early. It happens that the conductor was reading a glowing letter in praise of the plant from a subscriber at Memphis, Tennessee—June is probably the correct season for that locality.

EARLY FLOWERING RHODODENDRONS.—Among a large number, the Chancellor is the earliest to flower on our grounds. It is in full bloom by the beginning of May, while others are not out for a month later. It is besides a remarkably floriferous kind. *Blandyanum*, soon follows, and *Giganteum* steps right into *Blandyanum's* vacant shoes.

BRIDAL WREATH.—This is the name given in American gardens to *Spiræa Reevesii*. In English gardens "Bridal Wreath" is something wholly different, but what it is, is not clear from the description English writers give of it.

CATALPA TIMBER.—Of late years the Catalpa has been made to serve an excellent purpose in the furniture trade. It was used especially and with good effect by railroad car builders. It is, however, losing its name as Catalpa, and is known by the furniture dealers as White Mahogany. It has also occurred in the trade under the name of Pavara, but what is the derivation of this name is not known. In Philadelphia it is coming into extensive use.

HEDGES OF BALSAM FIR.—This tree usually loses its beauty earlier than the Norway Spruce, especially in bleak spots, or poor soil. But it is said to keep its beauty a long time as a hedge plant, and by its dark green color to be really unique among this class. It must be pruned to a conical form, which indeed is essential in almost all cases of successful hedge making.

BLUE HYDRANGEAS.—J. R. S., Rahway, N. J., says :—"In reference to your article in the May number of the MONTHLY about making the flowers of the Hydrangea blue, I have to say that I have very often done it by potting in earth obtained from a millpond here. My experiments have always been with Hortensia. I will try it with Otaksa and report the result."

MADASCAR PERIWINKLES.—The well known old and fine out-door bedding plant under this name, has recently been re-christened "Indian Periwinkles." Unless buyers keep the track of these "novelties" in name they will all the time find themselves paying high prices for the new names.

SMILAX WALTERI.—Mr. Bassett, in "Garden and Forest," calls attention to the great value of this climbing plant for ornamental purposes. While other species of Smilax have dull blue or black berries, the berries of this species are brilliant red,—holly-like. It is found in the Southern States, and extends northwardly as far as southern New Jersey.

The whole family of Smilax presents many points of beauty, rendering them worthy of more attention to cultivators than it generally receives.

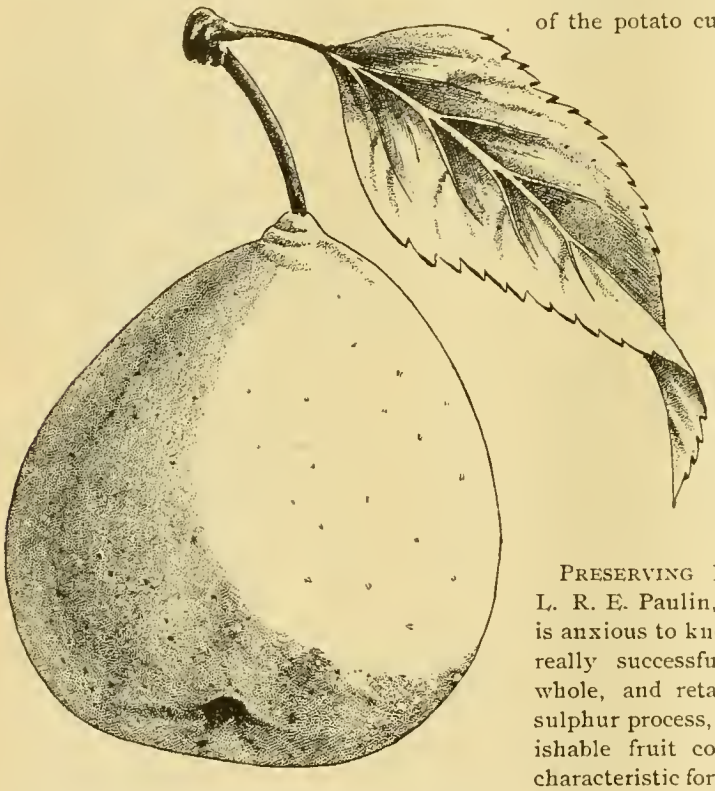
FRUITS AND VEGETABLES.

NEW STRAWBERRIES.—Notwithstanding the enormous number of varieties that have been named and sent out during the past twenty years, few, if any, have proved better in any one particular than the varieties which existed so long ago,—and yet it seems necessary to be continually raising new forms, because of the deterioration of the older ones. There seems to be no doubt but most strawberries degenerate after a few years, and unless other new forms are continually introduced, we should be reduced to kinds little better than the old forms of the woods. Prof. Popenoe of the Kansas Experimental Station, put out in 1890 no less than seventy-one varieties for the purpose of testing, and it is remarkable that of these seventy-one kinds there were not a dozen known to the writer of this paragraph, although he has endeavored to keep up with horticultural literature connected with the subject. There is little doubt that these seventy-one in a few years will be again entirely unknown.

PREPARING FRUIT AND VEGETABLES FOR MARKET.—Attractive fruit, providing they are also good, have always a recommendation,—and even inferior fruit when put up nicely, will attract the eye and get customers when articles of better quality are neglected. We have seen it stated that a grower of asparagus, whose product was no better than his neighbors, yet always sold out first because he fastened the bunches with a neat pink ribbon and scolloped paper, instead of a piece of bast or twine. How this is we do not know, but the general principle is correct. Neatness in presenting things often goes a good way to make up for other qualities.

EARLY PEACHES.—It has been common enough to have early peaches in market, but early peaches as a general thing are poor in quality, and do not take well. Some large dealers in produce the past year endeavored to remedy the state of things, by offering larger prices for fine specimens of early kinds. As much as $40 a ton were offered in some of the southern districts the past year for early peaches, provided that they were not less than 2½ inches in diameter.

VERMONT BEAUTY PEAR.—Amateur gardening, which it is the special province of MEEHANS' MONTHLY to encourage, is not only confined to the fruit and vegetables that are really good to eat, but derives as much pleasure from their beauty as from their quality. There is no reason why beauty and first-class flavor may not be united together in one fruit; and to our mind it is always an additional recommendation when a good fruit is beautiful. This pear, the Vermont Beauty, is a new seedling which originated in northern Vermont,



VERMONT BEAUTY.
A beautiful new seedling pear that originated in Northern Vermont. Fruit of medium size; flesh melting, sprightly, and the best quality; tree healthy, hardy and very productive. October.

and is one of special beauty. The dark shading on the pear in the cut is a bright crimson, while the lighter shade is of lemon yellow. It is represented to be of the very best quality, and to ripen its fruit in October. It is being introduced by W. P. Rupert & Sons of Seneca, N. Y., whose description we copy.

ORANGE GROVES.—The regulation distance for planting Orange Groves in Florida is 25 feet by 25. This gives 2800 trees for each acre.

POTATO STEM-BORERS.—Several years ago the common potato was sadly afflicted by a beetle, which deposited an egg in the stems of the potato; the egg forming a worm which completely eat the heart of the stems away; as a result the potato soon wilted under hot sun and died, almost ruining the crop. As soon as cultivators discovered this, the potato stems were drawn out of the ground and burnt as soon as they withered away. In this manner the insect has been kept down to such an extent that it is not now a serious enemy of the potato cultivator. *Insect Life* now reports that the sweet potato is in the same manner being attacked by a borer, which it calls *Cylas formicarius*, which is like to be as destructive as the one connected with the common potato. It will be well for cultivators to note any wilting of the leaves of the sweet potato plants, and examine whether there is a borer in the stem near the roots,—and, if so, to burn them as in the case of the common potato, so as to get control of the insect before it becomes too numerous.

PRESERVING FRUIT TEMPORARILY. — Mrs. L. R. E. Paulin, of Bloomfield, New Mexico, is anxious to know whether there is anything really successful that will preserve fruits whole, and retaining their color, besides the sulphur process, by which comparatively perishable fruit could be retained sufficiently characteristic for a few weeks, so as to be fairly exhibited at the World's Fair. Several growers in that vicinity are anxious to show what New Mexico can do in the line of fruit raising.

ONION SETS.—In some parts of the American continent the onion when sown in spring, goes on growing till fall, making a large onion from seed the first year. In others the seedling goes to rest soon after it is formed, and then we have "sets" that have to be again planted the succeeding spring. It is worth remembering that the smaller these sets the better they are for the purpose, as large sets are very apt to run to seed.

SEAKALE.—Pursuing the topic of first-class vegetables that are not in the general use that they deserve to be, we give with this an illustration on page—of the Seakale This is a thick, spongy vegetable growing wild on the seacoasts of southern Europe, and when properly prepared is just as delicious as the best asparagus, and yet of a totally different flavor and character, adding very much to the variety of early vegetables. In order to make it fit for the table, it has to be blanched, and it is more than probable that it is on account of the trouble of blanching that we so seldom see it on American tables. In the old world where its cultivation is reduced to a science, parties in the vicinity of woods where leaves can be gathered freely, are the ones who enter largely into its culture. Large pots, as they are called, seakale pots, are obtained from the potteries, which might be described as large flower pots without any bottoms—these are inverted over the seakale plants, and a lid placed over what we might call the bottomless pot—the whole of these pots are then covered with leaves gathered from the woods. The leaves are placed around in the autumn at the fall of the year, and by February and March the warmth of the leaves has so far advanced the growth that the whole of the pot is full of blanched stalks and leaves. The lid on the top is then taken off, and the product cut to the ground and taken out in that way. We suppose, as already suggested, it is rather troublesome for the average American gardener, with whom time is of much more value than with the gardeners of the old world ; but wherever the circumstances favor, it is a vegetable which pays well to grow. Instead of flower pots, little frames made by nailing four pieces of wood together, so as tc make a square bottomless box with another piece for a cover would do just as well as an earthen pot.

THE CRACKING IN THE PEAR.—It is well known that many varieties of the pear, which, under some circumstances, stand at the very head of the list for good quality, especially as regards flavor and similar edible characteristics, have become almost extinct on account of their tendency to crack their fruit. The old White Doyenne, or, as it is frequently called, the Philadelphia Butter Pear, is well known to be one of the most enjoyable of all pears ; the Uvedale St. Germain is another of these admirable fruits of the olden times. The fruit, however, is so universally destroyed by the little fungus which produces the cracks that one now rarely knows of a tree anywhere existing. The Bulletin of the Department of Agriculture, Division of Pathology, however, states "that experiments have been made by spraying pear trees that have their fruit cracked in this way with the Bordeaux mixture, a copper solution, and that the result is entirely effective in preserving the fruit from cracking. Spraying five or six times with the Bordeaux mixture—the first application to be made when the leaves are about one-third grown, and the others at intervals of ten or twelve days throughout the season. The cost for a full-grown standard tree would not average more than from twelve to fourteen cents a tree, while for dwarf trees eight to twelve cents would accomplish the work." We should be glad to know whether the experiments were tried with such trees as the old Butter Pear ; for, although we have full faith that the good results indicated would follow, we should like to know with certainty the instances where the trial was made with the success indicated.

BLOCKHEAD LETTUCE.—It is difficult to translate from one language to another, so as always to convey the original meanings. Reading recently a French translation of an American work, a man who became red in the face, became a "red man" to the French reader. Recently a new variety of hard headed, solid lettuce, has been given to the French reader as "the Blockhead"—a new English Lettuce. After all, Blockhead is not a bad name for a hard-headed Lettuce.

ONION CULTURE.—It is said that the onion has been found to thrive so remarkably well in Oregon, that in all probability that State will become a severe competitor with Connecticut in producing this bulb.

GOOD SEEDS.—When seeds are at their best, and the conditions for germination good, it is surprising how long a way a little weight will go. As many as 5000 plants have been obtained from a single ounce of onion seed.

BIOGRAPHY AND LITERATURE.

ORIGIN OF THE PLANTAGENET FAMILY.—The botanical name of the Spanish Broom or Scotch Broom is Genista, with which the word Genet is closely allied,—and thus we have the plant Genet or "Plantagenet." Mr. Plantagenet Broome, who died in Berlin recently, was a most interesting man, but not so interesting as was his name. The word "Plantagenet" and the title was given to the English dynasty because Geoffrey of Anjou, Henry II.'s father, wore a sprig of the broom-plant in his cap in battle. The verbal redundancy in the case of the late Mr. Broome is curious; but his fondness for his name was matched by that of Josiah Quincy, one of the recent members of the famous Massachusetts family, who named his son Josiah Josiah Quincy.

WM. HAMILTON.—The Lombardy Poplar.—It has been clearly proved by a reference to Dr. Mease's "Pictures of Philadelphia," that the Lombardy Poplar, like so many other foreign trees, was first introduced by Wm. Hamilton at "The Woodlands" near Philadelphia, in 1784. Many of these earlier trees are still there—now the Woodlands Cemetery,—but the original Poplars are dead and gone.

FLORAL MYTHOLOGY.—One of the most entertaining subjects of ancient history is that connected with mythology, and the student learns with much interest how closely related are some of these stories, although wrought into shape by nations and people seemingly without any communication with each other; and this is often used by anthropologists as constituting a proof of the doctrine of the early unity of origin in mankind. A noteworthy instance of this is in connection with what is called the sacred flower of China, the *Narcissus tazetta*, a close relative of the *Narcissus* of the poets, so common, and so well known in our gardens. The mythological story as we have it, coming down from the Greeks, is, that Narcissus was a remarkably vain youth, and in those early days when our glass mirrors were unknown, he used to go to the sides of clear water streams, and admire what he supposed to be his great beauty, as reflected in the water. He eventually died, and on account of his habits, the gods turned him into a *Narcissus*, which loves to grow along the water side. It so happens that this Chinese *Narcissus* has a very similar story in connection with its early history in China. Its name in China is *Shee-gin-Fa*, which translated, means the flowers of the water genii; which seems to indicate that in some way or another, some of the early Chinese gods were connected with its history, in similar manner to that which has been handed down to us in relation to the youth Narcissus.

LEWIS A. LEE—Value of a good magazine.—Few appreciate the value of a magazine like MEEHANS' MONTHLY.—Let us illustrate by the old *Gardener's Monthly*. In September, 1869, it announced the discovery by a Chicago gardener, Lewis Lee, that Paris green was a sure protection against the ravages of the Colorado potato beetle. It is safe to say that millions of dollars have been saved to our country by this discovery. Had Mr. Lee been a Frenchman his government would have adorned him with crosses, and he would have been placed on a par with Parmentier who made the first potatoes popular. Chicago should look him up and do him some honor yet if living. He ought to be one of the lions of the exhibition.

DR. ADAM KUHN.—Adam Kuhn was among the earliest patrons of botany in Philadelphia, and probably the first Linnæan Professor of Botany in America, and Linnæus named the beautiful genus of composites, *Kuhnia*, in his honor. The family is still prominent in Philadelphia, and his grandson, Hartman Kuhn, died on May 14th in his eightieth year. He inherited considerable of his grandfather's love for flowers, and was fond of planting rare trees on his grounds in his younger days. He leaves a son, Mr. C. Hartman Kuhn, to maintain the honored name.

PROF. REGEL.—Few of the great botanists of the old world are better known in America than the distinguished director of the Imperial Botanic Gardens of St. Petersburg, Prof. Eduard Regel. He has interested himself more, possibly, than any other European botanist in getting the plants of Asia and the hardy varieties of Russia introduced into our country, and much of the good work of obtaining hardy trees and fruits for the northwestern part of the Eastern States has been due to his aid and encouragement. He was especially ardent in relation to getting the trees of the Rocky Mountains introduced into Russia—he having found by experiment that these were all perfectly hardy so far as Moscow. His death is deeply regretted everywhere, as he was undoubtedly one of the foremost botanists of our age. He was born at Gotha on the 13th of August, 1815. His earlier labors were in Switzerland, but the latter years of his life have been spent at St. Petersburg. He was the founder of the beautiful, horticultural, German work "Gartenflora," on the type of which our own Monthly is in a measure founded. The illustration we give with this is from the *Gardeners' Chronicle*, and which was taken, our contemporary says, some few years ago.

DR E. REGEL.

BUHACH.—Many persons have been puzzled as to the meaning of this term, given to the famous fly-powder, produced in such large quantities in the Pacific States. Even the *Century Dictionary*, which tells us all things, is unable to solve this riddle. A good correspondent, Dr. Charles W. Greene, tells us that Buha is the Servo-croatian for "flea" and that Buhach is Servian for "fleabane." As the plant which produces this, namely, *Pyrethrum cinerariæfolium* is a Servian plant, we can readily understand now the meaning of the application of the term.

THE PEARY RELIEF EXPEDITION. — Lieut. Peary headed an expedition, organized under the auspices of the Academy of Natural Sciences of Philadelphia, for the exploration of northern Greenland. Mr. and Mrs. Peary with six hardy explorers, were to winter at McCormick Bay, in the Arctics, and then push northward with the first blush of spring light for the north, returning in time on the chance of meeting some whaler to bring the party home. It has been thought possible that Lieut. Peary might find good reason for staying another season to complete something desirable. So the Academy decides to send out more provisions to help him to stay, or to bring him and party home, should that be thought desirable instead of trusting to a chance whaler. The expedition will sail from New York on the 15th of June. Mr. William E. Meehan of the Editorial Staff of the *Public Ledger* of Philadelphia, and son of the Senior Editor of MEEHANS' MONTHLY, forms one of the relief party.

HISTORY OF INDIAN CORN CULTURE.—Professor McAdams, from investigations in Monk's Mound, St. Clair County, Illinois, believes maize was cultivated by some one on this continent 2000 years ago. The Winnebago Indians of Wisconsin were found cultivating it when the white man first came into contact with them. They, or rather their women, planted in hills just as we do, by using large clam shells for drawing the earth together, and the "corn crib" was simply earth drawn over hills of husked corn with the same shells to keep them protected for future use.

THOMAS GREEN.—Surely the inventor of the lawn mower should be ever held in grateful remembrance. What could we do now without the lawn mower? He died at Leeds, England, on the 19th day of April, in his 81st year.

GENERAL NOTES.

PROGRESS OF OUR MAGAZINE.—The space at command is too limited or the many good things said by friends of MEEHANS' MONTHLY, would appear from time to time. So many friends of the magazine have been raised up, that it is perhaps due to them that they should know that that feeling of helpful assistance is so general. The general expression is one of sincere thankfulness that such a magazine has been started. So practical is the sympathy with the work, that no end of trouble is taken to send around our sample copies and to get subscribers. As we write there is a letter from a Boston friend with a list of thirteen names and a check for $26.00, the result of a day's work among friends. It is only by this cheerful aid of friends that the work can be known, —the usual "clap-trap" style of getting subscribers, cannot for a moment be entertained. Readers only are wanted, who love the work for its own sake. The young men of the establishment, under whose enthusiasm the work began, had no idea of turning back, believing that even their grand-children would be proud to continue it even after they shall have departed—but they did not look for financial recompense for several years. It will be a pleasure to the friends of the enterprise to know that if the interest in making the work known continues as it has done during the year since the magazine was born, the beginning of the coming year will see the turning point of the financial burden. The publishers believe that they are doing a work for garden botany and gardening in general of which Americans will always be proud,—and it is very gratifying to find this thought so widely appreciated.

THE NEXT PLATE. — The Southern States will be represented in next MEEHANS' MONTHLY, by one of its beautiful Pitcher plants,— the *Sarracenia flava*. By the way, many commendations have been awarded to the last handsome picture of *Opuntia Rafinesquii*— praised for its artistic merit, besides its botanical fidelity.

A TREE ON A TOWER.—Seeds of trees taken by birds, or by winds, frequently lodge in some decaying mortar crack on the tops of high buildings, and will grow out and make quite large trees. One of these is in the city of Utica, N. Y., where on the top of a city church tower is a Mountain Ash, which, about fifteen or sixteen years ago probably, sprouted. It still continues to grow, and has now reached a height of about seven feet. The roots push their way into the cracks and crevices of the mason-work. During the last two or three years it has blossomed and borne clusters of scarlet berries. It is said by some friend to be one of the interesting sights of Utica.

ANIMALS TRESPASSING.—In a recent case tried before Judge Finletter, in Philadelphia, in which a person was charged with an offense in killing a neighbor's cat which annoyed him, it was decided that this was perfectly lawful; that in any case where animals trespassed to the annoyance of any one, and there was no possible chance of catching and holding them, the person so annoyed was justified in shooting as his only protection against annoyance.

PROCEEDINGS OF THE AMERICAN POMOLOGICAL SOCIETY.—Prof. Burrill, of the University of Illinois, at Champaign, is very anxious to get a report of the first meeting of the National Convention of Fruit Growers, New York, October 10, 1848, and for the second meeting of the same at Syracuse, N. Y., September 10, 1849, — these Conventions being the parents of the American Pomological Society. Any one who has copies to dispose of, will oblige the conductors of this magazine by advising Prof. Burrill thereof.

A COIN MAILING CASE. — Mr. Charles T. Thatcher, of Rochester, N. Y., has invented a little mailing book, by which coins of any size can be sent through the mail in letters without the contents of the letter being known to outsiders. It is a very useful invention.

SARRACENIA FLAVA

SARRACENIA FLAVA.

LARGE YELLOW TRUMPET-LEAF.

NATURAL ORDER SARRACENIACEA.

SARRACENIA FLAVA, Linnæus.—Flowers yellow; leaves large, erect, trumpet-shaped, narrowly winged; lamina yellow, erect, orbicular, slender pointed, tomentose within, reddish at the base, or reticulated with purple veins. (Chapman's *Flora of the Southern United States*. See also Gray's *Manual of the Botany of the Northern United States*, and Wood's *Class-Book of Botany*, under Sarracenia Gronovii.)

The large yellow trumpet-leaf has been one of the chief species to make the wonderful genus known. Up to the time of Linnæus this and *Sarracenia purpurea* were the only two species discovered, *Sarracenia variolaris* and *Sarracenia psittacina* being the two next, which were first described by Michaux in 1803. The knowledge of the *Sarracenia flava* is, however, almost contemporaneous with the discovery of the continent, as a figure of it is found in a work by Lobel, issued in 1576. A French captain, Jean Ribaud, made a voyage to Florida about the year 1562, and, as this plant is quite common in that State, Lobel's knowledge of it may have been derived from that source. Its appearance in Lobel's work is remarkable. He is describing some tree, which he calls Thuris, and which is evidently, by his description, some kind of an arbor—vitæ, or sweet, gum-bearing cedar, and, by some mistake, the pitcher plant leaves are given as the illustration of the text! The error, however, does not concern us here, but the drawing shows at what an early date our plant was known to Europeans. It is referred to in the works of most of the earlier botanists, under various names, until its final one of *Sarracenia flava*, as given by Linnæus. Though not as showy or distinguished by highly colored markings as some of the other species, it commands attention by its greater size, the leaves and flower-stems being sometimes three feet in length, and the flower double the average size of any other kind. It forms a very interesting part of Southern scenery. Usually it grows in damp situations under the shade of pine trees, but it is often found in ditches by the roadsides, where it keeps the traveler company often for miles. Audubon, in his famous work on birds, uses the large yellow trumpet-leaf as garniture for a picture of one of his aquatic birds, and represents it as growing in water, only the upper portion of the pitchers being above the surface. This could scarcely have been from experience, although the leaves and flowers are otherwise truthfully drawn. Audubon was not, probably, as particular in the accuracy of the surroundings as in the birds he so loved to paint.

The Sarracenias afford an excellent field for study by those who love to contemplate how plants are made, and how one species may come to differ from another. It will often be found that, in the early stages of growth, several species will be essentially the same, and that the suppression of growth in some parts at an early stage, or the continuation of growth to a later stage, makes all the difference between one species and another. Now *Sarracenia purpurea*, the Northern species, has the leaves yellowish green in the early part of the season, changing to purple as the season advances. It is a late flowering kind in comparison with *S. flava*, which is in bloom from February to April, according to the earliness of the location. It is but reasonable to suppose that a late flowering habit would partake of a late flowering color, and instances are known where flowers of the *Sarracenia purpurea* have assumed a yellowish green appearance, in the line of *Sarracenia flava*. It is not at all improbable that, if the *Sarracenia purpurea* could assume a very early habit of flowering, its flowers would in time approach close to *Sarracenia flava* in many respects. Then, much may be learned by a comparison of one species with another. In *Sarracenia psittacina* the tube or pitcher is always small, and the wing continues large to the end of growth; but in the species we now illustrate the wing is broad only when young (Fig. 1), while in *Sarracenia psittacina* the leaves seem not to have advanced far beyond this

stage, but the early growth is continued in the present species, where the wing expands, forms a large tube, and leaves little margin left for a wing. When, therefore, the botanist, in describing our species, as in the description from Chapman at the head of our chapter, says, "leaves narrowly winged," he is describing what is, and not what might be. Another lesson is afforded by the botanist's description. The leaves are first described, then the lamina. Now, the lamina, in its usual sense, is the blade or expanded portion of the leaf, and all that remains is petiole or leaf-stalk. One might infer from this that Dr. Chapman regarded the hollow, pitcher-like part as mere inflated leaf-stalk or petiole. But the morphologist would find just as much probability that the flat or winged condition is a leaf in which the two inner surfaces have become tightly folded and united together, the pitcher being formed by a partial separation of the united faces. In this case the leaf of a *Sarracenia* would be regarded as being sessile, that is, having no leaf-stalk The lesson is valuable in this, as showing that, while we must have terms to distinguish one form of structure from another, they may be theoretically all the same.

All the species of *Sarracenia* have served to illustrate various points in the discussions of the relation of the structure to carnivorous characters in plants, but *Sarracenia flava* has been particularly famous. It was the first one to suggest to that acute observer, Sir J. E. Smith, that the plant secreted the water found in the pitchers, and that the liquid was not merely caught there from the rain, for, in his "Exotic Botany," he remarks: "*Sarracenia flava*, and more especially *Sarracenia adunca* (now regarded as the same as *Sarracenia variolaris*), are so constructed that rain is nearly excluded from the hollow of their leaves, and yet that part retains water, which seems to be secreted by the base of each leaf." In regard to its arrangements for enticing insects to their destruction, Dr. Gray, in *Silliman's Journal* for 1873, says there is a sugary secretion at the mouth of the pitcher in this species. In plants he examined there were dead flies, but little water, at the base of the pitchers. "One would hardly think that the fine and sharp deflexed bristles which line the lower half of the tube only in *Sarracenia flava* would greatly impede the return of a fly, they lie so closely against the wall of the tube. But I find that a house-fly, either large or small, when thrown into the lower part of this tube, is quite unable to get out, and there it perishes. Probably the advantage derived by the plant is equally secured, whether their prey decomposes in the moist air of the cavity or in the water in which they are often immersed." Later in the same year Dr. Gray returns to the subject, showing, on the authority of a correspondent, that the saccharine secretion extended for about a quarter of an inch above the junction of the lid with the rim. Many flies feasted on the evident narcotic. Evident signs of intoxication were manifested in each case by their breaking loose repeatedly before tumbling into the gulf." In relation to the existence of the sweet secretion and the water, Dr. Gray's correspondent notes: "We observed then, and since, that the water in which the flies are drowned is a secretion; it distills in drops from the inner surface of the young pitchers before the orifice opens." The sugary excretion appears "only after a summer temperature was once established. It makes its appearance at first in the form of minute pearly globules, distinctly visible under a lens. At length it forms flattened drops, and even patches distinctly sweet to the taste and viscid to the touch."

It is by no means clear that the true design of these pitchers and insect-capture has been perfectly developed; but the object of these chapters is to encourage original observation and research, and this is best served by a record of what has already been said on the subject.

WILD FLOWERS AND NATURE.

A BROOKLET IN THE WOODS.

Softly in through a long aisle of willows, dim and cool,
Stole the clear waters with their muffled feet,
And, hushing as they spread into the light,
Circled the edges of the pebbled bank
Slowly, then rippled through the woods away.
—N. P. Willis.

Figs.—The flower of the fig is extremely small, and numbers of them line the inside of the fruit we call a fig. The only access to this flower is by the small needle-sized hole at the apex of the fig. These flowers are almost always female flowers, and the flowers which bear the pollen are usually on separate trees. It is supposed that the pollen is carried inside of these flowers by a very small insect which abounds on the male flowers; hence it is the practice with fig raisers in some parts of the world to tie branches of the pollen-bearing flowers on the trees which bear the figs, as they believe the insects travel from the pollen-bearing flowers to those which bear the fruit, and in this way fertilize the flowers. This process is called caprification. Undoubtedly, however, the pulpy portion of the fig comes to perfection without any such bringing of pollen from other flowers, although the seed may possibly be imperfect.

Tamarack on the Pacific.—Prof. Lake says: "In reply to your query on page 84 June issue of Meehans' Monthly, I would say that 'Tamarack' is a common name in Southern Oregon for *Pinus Murrayana*, while *Larix Lyalli* and *occidentalis* in the Cascades are both called Tamarack. Dr. J. R. Cordwell who has given Oregon conifers some study, says the name Tamarack is also sometimes applied to certain tall, slender and smooth bark forms of *Abies grandis*. As to the papery bark I am not prepared to speak, having never seen or heard of it before."

Mrs. Ross Lewers, of Washoe County, Nevada, also sends us a specimen, though we took it to be its neighbor, *P. contorta*.

Wild Flowers of Connecticut.—Dr. Graves, of New London, Ct., notices that some plants, comparatively rare in many parts of the State, may be found in a locality near that city known as the Devil's Hop-yard. Near there is a narrow valley, half to two miles long, bounded by craggy hills, closed together at the head of the valley, forming a cascade of about twenty-five feet high, known as Chapman's Falls. On one of the ridges of the rocks, *Asplenium montanum*, which we recently illustrated, is found in great abundance. *Dryopteris* is common in one place by the roadside. Again, other rare plants near there, are, *Clematis verticillaris* and *Streptopus roseus*, while ginseng is plentiful on a rocky slope, known as Hinckley's Ledge. Moose Wood, Red Cherry, Blue Cohosh, Spikenard, Virginia Snake root, and the *Parietaria Pennsylvanica* grow there in more or less abundance. It is said to be one of the most delightful botanical regions in the vicinity of New London.

Extermination of Wild Flowers.—The demands upon the forests in the old world for native ferns for decorative purposes have been so great that even species comparatively common are in danger of utter extermination. A law has been established to endeavor to stop this. We find by an English paper that a man who was caught pulling up ferns in the woods and had already pulled up 1,100 plants, was sent to prison for two weeks, besides having to pay a considerable fine. The destruction of some species, especially of the climbing fern, is also threatened in our own country.

Thuja gigantea.—This beautiful arbor vitæ from the Pacific coast, supposed by many not to be hardy on the Atlantic slope, thrives very well in Meehans' nurseries, from which plants have been distributed for a number of years past. No plant has ever been injured there. Customers who buy them, complain at times that they transplant badly.

AN ORANGE WITHIN AN ORANGE.—A correspondent from Mahanoy city, Pa., sends an orange from the top of which another small orange is growing, and asks for an explanation.

It is not easy to explain this unless one understands something of the science of vegetable morphology. With a little knowledge of this, the explanation is very simple. In a brief way it may be said that nature makes one part of a plant out of what might have been some other part, and so on down to leaf-blade. The orange fruit is made up out of transformed leaves, or what might have been leaves or flowers. Now if we can imagine ten flowers around a stem, and the stem prevented from elongating so as to form another set of ten flowers,—and then further imagine the ten flowers changed in character so as to unite together, become pulpy, and seem like one homogenous mass, the result would be very much like what occurs in the formation of an orange. Now imagine further that the stem instead of being wholly suppressed, tries to go forward, and make another weak set of flowers, but is promptly arrested and forced to form another small fruit instead, again we get at nearly what really occurs. We may say that an orange is a suppressed and changed branch, — the orange within the orange, is the growth of a not wholly suppressed branch.

This will not be very clear to many, but it is the best that can be done in a brief way.

The Navel orange is to be explained in the same way.

RED AND BLACK BERRIES. — It has been noted of late, that where there are red berried plants, we may look for forms with black berries. There are red and black forms of black berries and raspberries and of currants ; also in the cranberry, or Vaccinium family, in the Amelanchier, or June-berries, Prinos, or Ink-berry family, the Dogwood family, the Elderberry family, and numerous other illustrations may be given. Not long since a plant of the English Holly, *Ilex aquifolium*, in England, produced black berries, and the members of the Linnæan Society, before whom it was exhibited, could only think of its being "probably caused by a fungus." We think American observers of wild flowers would rather say "the natural tendency is that way."

THE RED ELDER-BERRY.—American botanists have concluded that there is no material difference between the *Sambucus racemosa* of the old world, and *S. pubens* of America. In Wittwack's *Gartenflora* is a contention for specific difference. The European flowers the end of April, the American the beginning of May. The leaves of the European are more coarsely serrate and more attenuate at the apex,—and the veins are somewhat different. These differences have been in the main recognized, but still are regarded as not dividing the two forms materially.—It may be remarked that in the Northern Pacific, the red-berried elder is one of the loveliest of bushes in wild flower scenery. The writer has in mind a specimen seen near Fort Wrangel, taller than himself and as wide as tall, covered with bright red berries—a most beautiful sight.

YELLOW DOG-TOOTH VIOLET.—Prof. E. R. Lake, Pullman, Washington, says :—"In your very excellent journal I notice on page 86 of the June issue a statement to the effect that the Dog-tooth Violet is white on the Pacific Coast. I can not imagine how so sweeping a statement can be made regarding this point, for of the thousands of specimens I have seen only a *very* few have been even light-yellow, to say nothing of white. At least this is the state of affairs in Oregon and Washington.

Was not the statement made too general ? Ratton says *E. grandiflorum* is yellow also in California."

[Yes ! it was too sweeping,—the writer of the paragraph had in mind at the time the variety *albidum*, which happened to be the only form he had met with in his personal collections.—CONDUCTORS.]

COLOR SPOTS IN COMPOSITE FLOWERS.—The note in an early number of MEEHANS' MONTHLY, that last year there appeared in *Rudbeckia hirta*, crimson spots at the base of the ray petals—as we often see in some species of *Coreopsis*, has brought out a good collection of facts that must be of great interest to wild-flower lovers, and to botanical science. An additional note is now contributed by Mr. Wheeler, of Lynn, North Carolina. The same markings occurred last year in *Helianthus atrorubens*. In a number of plants the markings were quite conspicuous.

VIRGINIAN JASMINE. — A correspondent writes: "Can you tell me what is the Virginian Jasmine? In a French work on popular flowers, published in the early part of the century, reference is made to it in this manner: 'Look at the Virginian Jessamine! with all the attractions of its refreshing verdure and purple flowers, it remains an alien among us.' At first I had thought of the Carolina Jasmine, a representation of which you have on the title page,—but its flowers are yellow and not purple."

[The Virginian Jasmine of French catalogues of to-day, is *Bignonia radicans*, which our people know as the Trumpet vine, but the flowers would hardly be called purple,—nor is it clear in what sense the French author regarded it as an alien in France, unless in a refusal to become naturalized.]

THE ORIGIN AND MEANING OF NAMES.—The Red-wood of California was named *Sequoia* by Endlicher, who gave no explanation of the name. It is questioned whether this was from Sequoyah, the great Cherokee chief,—or derived from *Sequi* or *Sequor*. It is said of a distinguished botanist, when deciding that neither explanation had much advantage over the other that he said, "it matters little. A name is a name and nothing more," which in a certain sense is true enough—and yet the origin of names will always have a wide interest. There is not one of us but is a good listener when any one versed in such matters gives us the origin of our own surnames.

ARBOR ON THE GROUNDS OF WERNER BOECKLIN ESQ. BURLINGTON, IOWA.—SEE P. 122.

ANGEL'S TEARS.—According to a European paper, this is the common name given to some of the forms of *Narcissus triandrus*,—one of the smaller flowered forms of this beautiful family. The segments of the perianth are reflexed, exposing the crown, so that the flower very much resembles in some respects a Cyclamen. Of late years the narcissus has been wonderfully improved, and quite a number of races have been introduced, which gives a great deal of zest to their cultivation.

OMPHALODES VERNA.—It is rather surprising that this beautiful little herbaceous plant is not more generally grown. At first sight, the flowers resemble those of the fig tree; but are larger and broader than any species of that genus. It has the merit of taking care of itself fairly well; but does not like to be exposed to very warm or open places.

THE LOVE IN A MIST.—It is said that this well known garden plant—*Nigella damascena*—has thermometric abilities,—that its flower head droops when the weather is warm, and stands erect when cool. It is a statement that has been oft-repeated, but needs some verification in our country.

UTILITY OF CACTUSES.—One would hardly believe that so uncouth and forbidding a looking plant as the cactus should ever be found to be valuable. A correspondent from Western Texas, offers encomiums on the great value of a number of species, and especially the *Opuntia Engelmanni*. The small thorns are singed off, and then the fronds are pounded up as food for sheep and cattle. In some parts of Mexico the fruits of these plants are as desirable for human food as the stems are for animals. They are also slightly singed before using, on account of the very fine bristles which are usually found on them. Some of the fruit can hardly be distinguished in taste from well ripened gooseberries,—in fact, botanically, there is very little difference between the gooseberry and the cactus. The botanical analysis of the flower shows very slight distinctions. The cactus might without examination, be simply called a succulent form of the gooseberry.

BERBERIS THUNBERGII.—SEE P. 121.

COLOR OF FLOWERS IN THE EARLY AGES OF THE WORLD.—Some scientific papers have endeavored to show that in the early ages all flowers were yellow, and that the various colors we now have have simply followed the introduction of insects—that flowers have, in other words, been made beautiful in order to render them attractive to insects, to encourage their visits, so that the cross fertilization of the flowers might be better effected. As morphology teaches us that the petals of flowers are nothing but modified leaves, we might imagine that the earlier attempts at inflorescence would be green and not yellow.

THE COMMON POLYPODY.—*Polypodium vulgare*, is one of the most widely distributed of ferns, yet varies much in its choice of locations. In the northern portions of our country, it is generally found on damp or shaded rocks,—but as we go South we find it on trees, and often huge patches on the main branches of an oak or other tree give a peculiar expression to Southern forest scenery.

BUCKLEYA DISTICHOPHYLLA.—The late Professor Buckley, discovered a few bushes of a new plant on the French Broad river in North Carolina, which were named by Prof. Torrey, *Buckleya*. It is so rare that it is probably one of a number of species, formerly numerous, that have nearly disappeared on the American continent, but have near relations abundant in Japan. Of *Buckleya*, a closely related one is now known in that country *Buckleya lanceolata*. This is not rare, for Prof. Georgessen says in *American Gardening*, that it is "everywhere on the mountains." The leaves are used as salad greens, and are "said to be fine." The fruit is preserved, packed in salt, and then eaten with *sake* (?) which is probably some cruciferous plant.

SYMPHORICARPUS VULGARIS.—In an early number, a good word was said for the Red Snowberry, as an element of beauty, conspicuous especially in the senior conductor's recollections of North Carolina wild flower scenery,— and desirable for similar effects in landscape gardening. Referring to this, Mr. Wheeler, of Lynn, North Carolina, remarks that for "self-groups" too much cannot be said in its praise.

THE TOYOW, OR CALIFORNIAN HOLLY.—A correspondent of the *Pacific Rural Press* speaks of a specimen, 12 feet high, with red berries rivaling the Hollies of the East. It is botanically Photinia or *Heterameles arbutifolia*, and is closely related to the Hawthorn of the old world, also famous for its bright red berries. This of California is an evergreen as is the Eastern Holly referred to.

FORMATION OF A PINE APPLE.—Pine apple, like an orange, is formed by the suppression of growth in a branch; and the union and succulency of the floral parts. The growth of the stem has not been wholly suppressed as in the orange, and hence there is a small attempt at growth and leaves beyond the fruit.

CHAIN FERN.—This seems to be the English name coming into common use for the Woodwardia. It is more appropriate than some common names, allusion being made to the chain-like clusters of sporangia on the back of the frond.

GENERAL GARDENING.

THE RIPENING OF THE GRAPE.

Great father Bacchus ! to my song repair,—
For clustering grapes are thy peculiar care:
For thee large bunches load the bending vine,—
And the last blessings of the year are thine.
To thee his joys the jolly Autumn owes,
When the fermenting juice the vat o'erflows.
—VIRGIL.

THE LENGTHENING OF TREE TRUNKS.—Mr. C. H. Stein, of Camden, N. J., inquires whether branches which are now too low for convenience will get higher in time when the trunk of the tree lengthens. It is a general impression among those not familiar with botanical gardening that the trunks of trees lengthen, but this is not the case ; the trunk of a tree, being once formed, does not lengthen a fraction, no matter if it lives to a hundred years. A branch from a trunk that is now, say six feet from the ground, will have the center of that branch still six feet from the ground, no matter how many years elapse. If branches are, therefore, now too low, they had better be cut off at once. Again, it is worth remembering in cutting off branches that they should always be cut close to the trunk or to any main branch, so that the wound may heal over. If the branch is very large, so that the wound is likely to take several years to heal over, it is better to paint it, in order to keep the water from rotting the wood until it is properly healed. More good trees are spoilt through leaving an inch or two of stump to a cut off branch than people have any idea of.

FALL BLOOMING OF THE RHODODENDRON.—When plants that perfect their flower-buds in the autumn, in advance of the coming season, get their leaves injured before the flower-buds are quite mature, the buds often blossom in the autumn. This is familiar with pear trees that suffer from the leaf blight. A correspondent notes, under date of September 7th, that a Rhododendron on the grounds of Mr. Charles H. Miller, at Mount Airy, near Philadelphia, was in full bloom at that date—unusual with this plant.

BERBERRY RUST.—A correspondent inquires whether the rust which is found to exist on the Berberry plant can be communicated to a wheat field which may be growing in the vicinity, and whether it is, therefore, safe to have Berberry bushes growing on his lawn. It is an undoubted fact that the rust on the wheat and the rust on the Berberry are identically the same, and one can be communicated to the other ; but it does not necessarily follow that wherever there is a Berberry wheat will be attacked, because it is not at all common for the fungus which grows on the Berberry plant to be present on it. We have seen innumerable Berberry bushes in gardens entirely free from the fungus ; in fact, we believe it is the exception, and not the rule, to find bushes with the fungus growing on them. No one need fear planting the many beautiful forms of Berberry in their gardens through fear of giving the rust to his own or his neighbor's wheat fields.

MOLES ON LAWNS.—A very wise man once said that the best way to get anything done is to do it. A colony of moles made trouble on the cooler end of the writer's lawn, and "John" was worrying over the best kind of mole trap. He concluded the best way to catch them, was to catch them himself. Watching, spade in hand, for a disturbance of the earth, in an hour he came gleefully with three drowned in a water pot, which he humanely thought the best way of ending their unhappy lives. Another or two, at odd times, closed the trouble for the season.

COMBINATION GREENHOUSES.—One of our subscribers, Mr. Charles Dissel, has a range of greenhouses, divided into three sections ; one is for tropical plants exclusively, another for ferns, and the third is a cool house for such plants as do not require much more than to be preserved from frost. He says the last gives the most flowers, and is the gayest through the winter.

RHODODENDRONS. — Possibly one of the most beautiful gardens in the United States is "Medary," the residence of Mrs. Harry Ingersoll. When American landscape gardening was little more than a name, the celebrated Andrew Jackson Downing, a master in the art of landscape gardening, started to make American gardening something better than what it was. Among the earliest to second Mr. Downing's efforts was the late Mr. and the present Mrs. Harry Ingersoll, — and a visit which the senior conductor made to these grounds a few weeks ago, brought to mind the heavy debt which American gardening owes to this great master of the art of landscape gardening,—and some regret that Downing could not be living now, in order to see the beauty of the work which, nearly half a century ago, he planned here. We doubt whether among the famous specimens of landscape gardening in the old world, where great masters of the art have not been few, and some of them of great eminence, could be found anything superior as a living picture of grass, trees and flowers to that which "Medary" presents. The chief object of the visit, however, was to see the Rhododendrons, which were part of the ornamentation employed by Mr. Downing in carrying out his beautiful work. These are growing in large masses in appropriate positions where the effect of the blossoms against the background of foliage would produce the very best results. The largest plants in the center of the masses are probably from 20 to 25 feet in height, and dwarfish kinds taper down towards the edges. They have maintained their health and beauty through all these many years, and indeed increase in beauty with their age and size. It is worthy of note in this connection, that although the present extent of the love for Rhododendrons was in a great measure the result of the exhibits during the great American Centennial in Philadelphia, the earlier culture of this plant met with great encouragement from Mr. Downing, at whose suggestion these beautiful beds at "Medary" were planted ; and also does Rhododendron culture owe a deep debt of gratitude to the efforts of the Parsons, Sons & Co., who, long before the American Centennial, entered largely into their cultivation and propagation, and showed conclusively that these American plants were just as well fitted for American climate and American gardening, when the proper conditions were obtained, as they are for the gardens of the old world ; indeed it is highly probable that only for the preparatory work done by this celebrated Flushing firm, the efforts made at the Centennial would have proved fruitless. The work of the Flushing Nurseries had already made known the fact that they could be well grown in any American garden, and the Centennial did little more than advertise that fact and bring to the attention of the great public the remarkable beauties of this tribe of plants.

The gorgeous Rhododendron beds at "Medary" have escaped the troubles which sometimes afflict Rhododendrons elsewhere. The greatest enemy here is the Rhododendron stem-borer ; but by careful watching on the part of the excellent gardener, Mr. Sykes, who has been many years in charge of these beautiful grounds, the insect is kept down and is far from being troublesome. Some few cases of the Rhododendron fungus-girdler were also observed, but these also were kept down by the vigilance of Mr. Sykes.

ERGOT. — Those who have visited grain fields must have noticed frequently, large black wormy products in among the ears of the grain ; this is called ergot, and is the product of a very peculiar fungus. It is frequently called spurred rye, on account of the grains having the appearance of cock's spurs. One of the most complete papers on this subject, from a popular standpoint, showing how this fungus operates, so as to work through the plant and produce the ergot, is given in the *Country Gentleman* of October the 29th. The splendid illustrations which are given with the chapter make the whole process very clear, even to the most unscientific. When it is, however, stated that the paper was prepared by Prof. Byron D. Halsted, of the New Jersey Experimental Station, it will be readily understood that it could not be otherwise than popularly clear and scientifically exhaustive.

A SUMMER FLOWERING CALYCANTHUS.—In the Botanic Gardens, Washington, D. C., are two very large specimens of *Calycanthus*, known in old gardens as the "Sweet Shrub," which were laden with sweet-scented flowers in the end of June.

SEEDS FROM THE GRAVES OF THE MOUND BUILDERS.—From time to time there have appeared in the public prints notices of seeds obtained from ancient mummies in Egypt, or from the monuments of the dead in various parts of the world, or in the uncovered remains of the work of the ancient mound builders in our own country, which are said to grow readily after being planted. We have never been able to trace this statement to any authentic source, and consequently, in the absence of positive evidence, have always been tempted to doubt the existence of any plants from seeds so preserved. We have now before us a letter from a lady of Lake Mills, Wis., in which is given a detailed account of the opening of a mound on the bank of the Crawfish River and the taking of some seeds out of the remains of an old vase, and that these seeds are now producing young plants. The circumstances in detail are so much clearer and positive than usual that we shall look forward to the results of this trial with ancient seeds with far more interest than we have been accustomed to do.

SHADE TREES FROM FLORIDA.—Mr. E. N. Reasoner, of Oneco, Florida, states that, among the Australian trees introduced into that region, Grevilleas do fairly well. The Eucalyptus also is one of the genera, and manages to thrive very well without any particular cultivation.

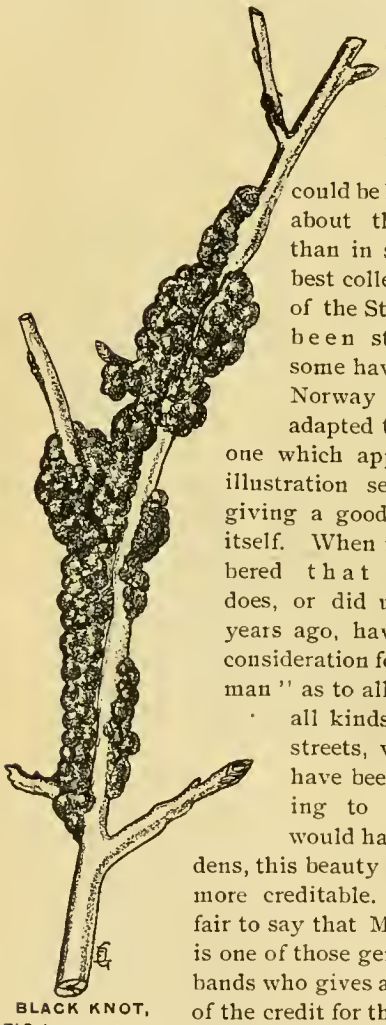
RED SPIDERS.—Californians seem to be very much exercised over the various kinds of insect troubles with which they have to contend in that country. By a paper recently issued by the horticultural commissioners, there seems to be no end to the number of injurious insects; besides black aphis, green aphis, red aphis—all sorts of scales down to the San Jose scale are treated with execration; but we are surprised to find that the red spider is not considered among the worst of insects. It is very bad in many portions of the Eastern States, and we should judge that the dryer climate of California would furnish this insignificant little insect a rich pasturage.

RESIDENCE OF WERNER BOECKLIN, ESQ., BURLINGTON, IOWA.—SEE P. 122.

BERBERIS THUNBERGII.—Every few years new species of Berberry come before the lover of gardening, but none have sprung so rapidly into popularity as the Japan *Berberis Thunbergii*. This is, in a measure, due to its spreading habit as a shrub, which displays to great advantage its beautiful golden blossoms, and to still greater advantage its red berries, which are of a much livelier red than is usual in Berberries. Not only is it in great demand for single lawn specimens or masses, but for dwarf hedges, for which it is admirable. (See p. 118).

EEL WORMS.—These little creatures are often very destructive in the flower garden. Lime water will readily get rid of them.

OUR SUBSCRIBERS' GARDENS. RESIDENCE AND GROUNDS OF WERNER BOECKLIN, ESQ., BURLINGTON, IOWA.—The illustrations on pages 117 and 121 represent the residence of Mr. Werner Boecklin, of Burlington, Iowa, and a capacious vine-covered arbor on the grounds of the same. For many years experiments have been made with rare ornamental trees and flowers, so as to ascertain their adaptability to the climate of that portion of Iowa; and possibly more could be learned here about this subject than in some of the best college grounds of the State. It has been stated that some have found the Norway spruce not adapted to Iowa, but one which appears in the illustration seems to be giving a good account of itself. When it is remembered that Burlington does, or did up to a few years ago, have so much consideration for "the poor man" as to allow cattle of all kinds to run its streets, which must have been very trying to those who would have nice gardens, this beauty spot is the more creditable. It is but fair to say that Mr. Boecklin is one of those generous husbands who gives a large share of the credit for this beautiful homestead in what but a few years ago was the "far West" to the good taste and judgment of Mrs. B.



BLACK KNOT, FIG. 1.—SEE P. 124.

DESMODIUM PENDULIFLORUM.—Under this name a beautiful plant has been in cultivation during the past fifteen years,—becoming very popular, and has had a wide distribution. There has been considerable confusion as to its proper name. The late Dr. Thurber identified it with the *Lespedeza bicolor*, figured several years previous in Hooker's *Botanical Magazine;* under both these named it is therefore known in collections. It appears, however, by an exhaustive paper in the *Garden and Forest* of March the 9th, that this identification with *Lespedeza bicolor* is wrong. This Lespedeza is a bushy shrub, often ranging several feet in height, while the plant in question, although shrub-like in its summer growth, dies annually to the ground. But the *Garden and Forest* shows that its proper name is *Lespedeza Sieboldii;* under this name it will undoubtedly be known in future in catalogues.

WEEDS AS MANURE.—The University of Virginia has, under the direction of Professor Millspaugh, been making tests as to the manurial value of some fifty kinds of weeds, taking the amount of phosphoric acid, potash and nitrogen they contain as the basis, and the value of these articles in the market. The *Phytolacca decandra*, the common pokeberry, in a dry ton, gave the remarkable value of these chemical matters, $21.93, while all the other forty-nine ranged from $16.26 down to $3.40 per ton. According to this, the best possible mode for green manuring would be to sow the land with pokeberries, to plow under.

CABBAGE WORM.—This is one of the worst enemies to the gardener, because poisons which we can apply to other plants cannot be safely used on this vegetable, but it is stated that the kerosene emulsion sprayed on the cabbage, is a sure destroyer of the insect, without in the least affecting the health of those who use the vegetable. The various insect powders made of pyrethrum, blown into the plant with the powder bellows, is also said to be effectual in destroying the worm, without being liable to the objections which poisons have.

YUCCA FILAMENTOSA.—This, which is well known in gardens as "Adam's thread and needle," though a native of the Southern Atlantic seaboard States, where there is little frost, is so constituted as to be able to resist an indefinitely low temperature. It thrives as well in the gardens of Canada, as in its Southern home.

ACACIAS FOR SHADE TREES.—Some of the acacias so well known in greenhouses for their winter beauty endure the open air of some parts of California, and, with a proper selection of the stronger growing kinds, will be found admirable street trees for that section. In Cairo, in Egypt, the great street tree is the *Acacia Lebbeck*, and which travelers tell us answers admirably, not only giving shade, but when in flower emitting a delightful fragrance. This is, no doubt, the species that Moore refers to, in his delightful poem of Lalla Rookh, as the acacia which in Persian lands "waves its yellow hair." There are few species native to the old world. Australia and South America constitute the great home of the family.

JAPAN PERSIMON. — *The Bulletin* of the Horticultural Society of Tuscany, states that the Japan Persimon is getting to be considerably planted in various parts of the old world. It refers to the fact of its well known acidity before getting perfectly ripe, but when completely ripe the juice is so modified that a cordial can be made from it which is far superior to the well known wine of the cherry so common in Germany. It is said that, properly prepared, the liquor is particularly delicious. It is propagated in the old world on the Diospyrus Lotus, and sometimes on the species from Virginia.

CROWN IMPERIAL.—It is rather surprising that this remarkably beautiful plant, known for so many generations, should not be more often found in gardens. It is very hardy, extremely easy of culture, and once planted will remain in a garden in the same place for half a century if a little enriching material be placed over where the bulbs are, occasionally. Its habit is so peculiar, having a tuft of leaves about the flowers, that it is quite unique in appearance; and this variation from the usual standard of garden flowers is a feature of especial interest.

MOUNTAIN FLEECE.—A New Jersey correspondent sends for name a plant with this "common" appellation. The same plant is known in Western Pennsylvania as Alleghany Vine. It is *Adlumia cirrhosa*. It has special common names in numerous other places.

FRUITS AND VEGETABLES.

EXPORTATION OF VEGETABLES TO EUROPE.—It is only during the last few years that the tomato has come into general use in the old world. Our American cultivators are already on the alert to supply the growing demand for them, and a London daily paper states that shipments by the aid of refrigerators have reached the London market in first class condition. During the last few years, since the English people learnt that there was nothing poisonous about them, their use has been somewhat wonderful—over a thousand tons were received from the little islands of Jersey, Alderney and Guernsey alone. The successful shipment of them from America is exciting a lively interest. It is said that experiments will be made the present year to supply strawberries from America as well as tomatoes to the English markets.

FIRE BLIGHT IN THE PEAR.—Fire blight, so called, is a disease by which the whole branch of the pear tree, often a very large one, suddenly turns black, as if destroyed by a stroke of lightning. Prof. Burrell is quoted as saying, that this disease only occurs in fruit bearing trees, and that he supposes that the germs of the disease are drawn in through the blossoms. We think it must have been a mistake,—that Prof. Burrell has been in a measure misunderstood. Certainly trees suffer with fire blight that are not in a flowering condition. A number of diseases have been confounded with the fire blight, and it is this confusion that has probably led to many of the speculations as to the cause of fire blight, which have been proved to be groundless.

BLACK CAP RASPBERRIES.—A few of these deserve a place in the garden of the amateur, because of their filling a gap in the fruit season. There are numerous varieties now, the chief difference, however, being as regards earliest. In New Jersey a variety called Carman, is regarded as the earliest. To a commercial grower a very few days make a great difference in the value of a kind, as he can forestall the market and get the best prices. This point is of not so much consequence in the amateur's garden, where quality will be preferred to a few days' advance.

TOMATOES IN THE OLD WORLD.—It has always been a matter of remark that the English people should have waited a half century before finding that the tomato was something very good to eat. Only during the last ten years have they been little more than a garden curiosity. Now *The Gardening World* states "that, like so many other products which have somewhat suddenly sprung into popularity, some people think that their growth for sale will soon glut the market."

The *World*, however, feels that the moment the price falls somewhat, it will become so popular as an edible as to widely increase the demand for it. It does not believe that the extraordinary cultivation of the tomato, now so popular in England, will ever come to an end.

THE BLACK KNOT.—The progress which scientific knowledge has made in connection with horticulture, during the past quarter of a century, has one of its best illustrations in the history of the Black Knot, a terrible disease which afflicts the plum and cherry, and as noted in a recent issue of MEEHANS' MONTHLY, is ready to take in the peach. Few knew more about fungi in his day than Dr. Schweinitz, of Bethlehem, Pa., yet he did not perceive, as now definitely known, that a fungus caused the Black Knot which was badly infesting the cherry trees so far back as 1790. It is interesting, in the early numbers of the *Gardeners' Monthly*, to note how gradually the idea developed that a fungus was the cause, gained ground until Prof. Peck, of Albany, clearly demonstrated that it was *Sphæria morbosa*, or, as the minute fungus which causes the excrescence is now termed, *Plowrightia morbosa*. Dr. Farlow next showed that it was a native fungus, its chief host-plant being the dwarf choke cherry, *Cerasus Virginiana;* the larger choke cherry, *Cerasus serotina;* the red wild cherry of the mountains, *Cerasus Pennsylvanica*; and the writer of this paragraph, the *Cerasus demissa* of the Rocky Mountains. Laws have been passed, looking to its extirpation in gardens; but, as the spores or reproductive organs float long distances from the wild host-plants, it is difficult to understand how "stamping it out" from cultivated trees can compensate for the loss and annoyances connected with legal efforts. Still, cutting away and burning the affected parts must have some influence in keeping the enemy in check, if done before the fungus perfects its spores. To aid in this good work, we are able, by the kind assistance of Professor Byron D. Halsted, of the New Jersey Agricultural Experiment Station, to give illustrations of it, which will enable the reader to understand the nature of the trouble. Fig. 1, on page 122, gives the appearance of an affected plum tree. Fig. 2, on page 125, gives a young knot highly magnified, which shows the form and chief characteristics of the fungus which causes the knot to appear.

CACTUS GROWING.—Mr. A Blanc, of Philadelphia, who has one of the finest collections of cactuses under cultivation in the United States, recently gave a lecture before the members of the Pennsylvania Horticultural Society, detailing the various methods by which they might be successfully grown. He spoke especially of the great advantages to be derived from grafting on different stocks. The lecture was very well appreciated. For some reason or another, the growers of cactuses, as a rule, have not had much success. They are supposed to be very easy of cultivation, and yet seldom look well. Mr. Blanc's admirable success in growing them healthfully shows that, like everything else, cactus growing is easy enough when you know how.

HYBRID RASPBERRIES.—A surprising story is given in Moller's *Gartner-Zeitung* for October, that the Souhegan Raspberry is a hybrid between the two European species *Rubus Idæus* and *Rubus fruticosus*,—that is to say, the English Garden Red Raspberry, and the common Blackberry of English hedge-rows. It is simply a form of our common Black-cap—*Rubus occidentalis*, found wild, and introduced into gardens, as being better than its wild parent.

CABBAGES.—*The Florida Dispatch* announces that a discovery has been made, that, by ploughing over a row of cabbages early in the fall, so as to disturb their growth without actually uprooting them, they will at once commence to harden their heads. This is a valuable hint for the practical vegetable grower.

DESTRUCTION OF THE CABBAGE WORM.—The usual poisons applied for the destruction of insects are too dangerous when applied to the cabbage, as the poisons get between the leaves and remain there. The destruction of the cabbage caterpillar, therefore, is one of more than usual difficulty. The "Canadian Horticulturist," however, states that Buhach powder, either in powder or in water as spray, is certain destruction to these pests, while the powder itself is perfectly harmless to human beings. This is an extremely valuable hint, as few troubles are more difficult to deal with than the attacks of the cabbage caterpillar.

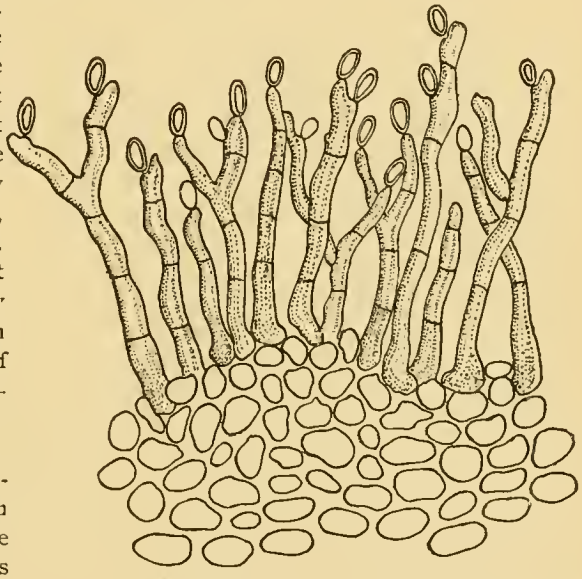
THE EDMONDS PEAR.—It is generally considered that the largest pear of any great value is the one known as Duchesse D'Angouleme. From specimens we have fruited at times we are inclined to think that the one known as Edmonds, sent out originally by Ellwanger & Barry, would be a good competitor with it. It is certainly larger, on the average, than the Duchess, though the quality is not quite as good. It is one of those pears that ripen first from the inside; the outer is apparently very hard and solid, yet in good condition for eating, notwithstanding. Its chief point of inferiority to the Duchess is probably in being too dry.

THE JAPAN PERSIMON.—It is worth remembering that while in America the Japan Persimon goes under the Botanical name of *Diospyros Kaki*,—in the old world it is catalogued as *D. costata*. It saves buying a plant twice over to remember these things.

LIMA BEAN POLES.—In many parts of the country where forests and poles are scarce it is difficult to grow the much appreciated Lima bean. Many schemes have been suggested for avoiding the necessity for poles. One of the most original is probably that recommended by the *Practical Farmer*, an excellent agricultural serial published in Philadelphia, which recommends that very strong, growing corn plants be started, and afterwards the beans allowed to climb up the cornstalks. This is an original thought. We have never seen it practiced, but it has an air of great probable utility about it.

LARGE EARLY PEACHES.—Eastern Kansas is boasting of the size of its early peaches. Hale's Early is said to have been grown at Hazleton, eight inches and one-eighth in circumference. All early peaches are rather small, and this size is good for this variety. This kind and the Alexander are still the most popular of the early kinds of peaches in Kansas.

FRUIT TREE BORERS. — These troublesome pests of the fruit grower do not like to work where the fruit grower paints the trunks near the ground with cart-grease that is made up of a portion of pine tar. Some employ gas tar, but this often does great injury.



BLACK KNOT, FIG 2.-- SEE P. 124.

A PRODUCTIVE POTATO. — The Montreal "Journal of Agriculture" states that a priest of that vicinity, who is a rare lover of agriculture, has been experimenting with potatoes, and has raised one which is enormously productive, having yielded 800 bushels on two arpents (French acres). It has been named "Syndicate, No. 1."

COPPER SOLUTION FOR THE DESTRUCTION OF FUNGUS.—Some people who use Blue Vitriol in the destruction of minute fungi,—first dissolve about three ounces in a quart of water, and then dilute with about twenty gallons of water,—and think it better than putting the copperas at once into the larger bulk of water.

BIOGRAPHY AND LITERATURE.

THE LOVE OF NATURE.

To him who in the love of Nature holds
Communion with her visible forms, she speaks
A various language, for his gayer hours
She has a voice of gladness, and a smile
And eloquence of beauty, and she glides
Into his darker musings, with a mild
And healing sympathy, that steals away
Their sharpness, ere he is aware.

—BRYANT.

C. V. RILEY.—Prof. Riley, the present distinguished Chief of the Entomological Bureau of the Department of Agriculture, who has received distinguished honors from all parts of the world, was born near London, and received his early education at Chelsea—the more advanced courses in France and Germany. Early in life he emigrated to America, and found himself near Chicago. He was an excellent artist, fond of nature, and especially of the study of insects. He was employed to write on these subjects, and he became one of the editors of the "Prairie Farmer." In 1868 he became entomologist for the State of Missouri, making a national reputation during the nine years that he held the office. He became particularly eminent by his studies, from 1874 to 1877, of the Missouri grasshopper plague. The Professor did not feel that it was necessary to interpret the locust and wild honey of St. John the Baptist to mean the carob tree. He himself fed on various dishes formed of the locusts, and found that they made delicious food. Notwithstanding his example, he found few followers. The division of entomology of the Department of Agriculture was founded mainly at his suggestion. He has held the position consecutively since 1878. Few men in scientific circles are more widely known and universally respected than Prof. Riley.

PETER KALM.—A funny story is going through some of the literary papers to the effect that Peter Kalm, the author of the celebrated *Travels in North America*, sent to botanize in this country by the great Linnæus, starting from Philadelphia, got so far as Swedesboro, N. J., where he was treated so well that he fell in love with a lady of that town, and, in consequence of this great attraction, did not extend his botanical travels over near as large an extent of territory as he would have done had not this great event in his life happened. We do not know by what authority this statement is made. He succeeded, however, in getting one of the finest genera of North American plants named in his honor. The Kalmia is so very beautiful, and so wholly peculiar to America, that it is a great wonder some one has not struck on it as the proper flower to be taken up as a national one.

O. B. HADWEN.—New England is famous for wealthy gentlemen who have taken a fancy to gardening, and whose pride is to have really handsome places,—places which would do no discredit to the landscape gardener's art. One of these choice places is that owned by Mr. O. B. Hadwen, near Worcester,—a city especially famous for the number of these beautiful places. His grounds are situated on a side hill, in which the Sugar Maple bears a conspicuous place in beautifying. A large number of other fine American trees have also found a place in the general make up. He has not confined himself, however, to these, as a large number of admirable specimens of European varieties give great attraction to the grounds. Although he has a large tract of natural woods, his great pride is in those which he has planted with his own hands, constituting a majority of all the most beautiful species. So many people think that it is scarcely worth while to plant trees, as they will never live to see them grow up. Trees, at least in America, grow much faster than they generally get credit for. A visit to Mr. Hadwen's place would convince even the most skeptical of the truth of this. Besides his love of gardening, Mr. Hadwen takes great interest in agriculture, and has a herd of cattle in which he takes much pride.

LEARN TO LABOR AND TO WAIT.—It has been truly said that no taste so broadens the scope of human life as gardening and garden botany. These pursuits lead to a sympathy with all studies that concern humanity. The table of a horticultural editor usually presents a remarkable scene of universal intelligence. Here before us lies a copy of "Unity Hymns and Chorals." Who would suppose such a book would have any bearing on the science or the art of garden botany? We take it up with some hesitation, but find that it is a selection of those hymns that may be sung by any person of any faith, with offense to none. The Roman Catholic hymn of "Lead, kindly light" stands side by side with the Unitarian, "Tell me not in mournful numbers," just like our magazine—ministering to universal wants—and the book so arranged that the desired musical notes can be brought, like a check in a bank-book, before each song. Surely, the practical horticulturist can feel his good resolutions strengthened with this verse of Longfellows:

"Let us, then, be up and doing,
With a heart for any fate—
Still achieving, still pursuing—
Learn to labor and to wait"

and the child of Science may be equally encouraged with Father Newman's lines:

"Lead, kindly light, amid the encircling gloom,
Lead thou me on!
The night is dark, and I am far from home;
Lead thou me on!"

We felt the better ourselves for reading these inspiring pieces, and laid the book down with thanks to the friend that placed it on our table.

HERMAN MUELLER'S scientific papers are copying from each other a statement that Herman Mueller, a writer on the relation between insects and flowers in cross-fertilization, made observations and records of these observations numbering ten thousand cases, before beginning to write his work. It could not take less than ten minutes in a solid day of ten hours for each observation and note,—and supposing the Professor kept on continually at this rate, Sundays included, for six months, or the flowering season each year, he would have to be regularly employed on this and no other work for five and a half years!—Science should be accurate. If the facts are accurately stated, truly fact is stranger than fiction!

CHARLES DARWIN.—A correspondent of the *Evening Sun* of New York, furnishes the following note on the late Mr. Darwin's home life:—

At Down, Darwin's home in England, he wore when outdoors a large black cloak and a slouch hat. Indoors he put a shawl round his shoulders, and pulled over his shoes fur-lined slippers, which must have kept him warm. He rose early, and was a severe economist with time. When he rose he took a short walk and breakfasted at 7.45. Then he retired to his study and did a lot of work before 9.30.

At 10 o'clock, when the mail arrived, he had his letters read to him. He read all kinds of novels as much as was consistent with his work, and found a great deal of recreation in doing so. After he had taken a turn at novel reading he went to his study again. At noon he was accustomed to take another stroll and to talk to a friend about natural history or to go through the greenhouse where he was making experiments. He had an object whenever he took a walk. A favorite walk of his was a sand path which went round a group of trees he had planted.

PROF. C. S. SARGENT.—Prof. C. S. Sargent is about to leave for Japan for a short time. Possibly to no one on our continent is Gardening and Forestry more indebted for the intelligent advancement made during recent years than to Prof. Sargent. His *Silva of North America*, and the *Garden and Forest*, are lasting monuments to his munificence and industry. The Flora of Japan is so closely related to the flora of the Eastern United States, that he will surely gather a fund of useful information for all of us, as we hope of great pleasure to himself.

L. H. BAILEY. CROSS-BREEDING AND HYBRIDIZING.—The admirable address of Prof. Bailey on cross-breeding of plants, before the Massachusetts Board of Agriculture, has been published by the Rural Publishing Company. An admirable bibliography of all that has been written on the subject gives the work an additional value to the original lecture. To every one interested in this subject, and to all horticulturists in fact, this work will be of value.

GENERAL NOTES.

THE VALUE OF A LOCAL PAPER.—The citizens of Philadelphia, according to its public newspapers, are taking some steps to do public honor to the work of the senior editor of this magazine, in relation to his work as a City Councilman. The *Germantown Telegraph*, referring to this, takes occasion to say many kind words, especially in regard to the value of the Councilman's work for his own district, namely, Germantown. Disclaiming all thought of simply returning a compliment, it seems fair to say that if the work of the Councilman has been of the great value to Germantown that it is represented to have been, the *Germantown Telegraph* itself should have a portion of the credit. Many years ago, when comparatively a young man, the senior editor had never been to Germantown, but he was a regular reader and admirer of the *Germantown Telegraph*, and he gathered from its pages that Germantown was a live place and just the place for an energetic young man to settle in. He accordingly paid a visit to Germantown, and went to see the editor of the *Telegraph* first. He asked his advice where to locate, and the probability of successful business; and it was entirely by the advice and by the help of the information which he received from him that he concluded to make Germantown his permanent home.

It has often occurred to the writer, not only in connection with Germantown, but with many other towns, that not near enough importance is placed on the value, to the business of the locality, of having within it a live and successful local paper. Certainly, but for the facts above noted, the large business which now employs so many hands in the old borough of Germantown might never have been there.

SHIELD FERNS.—A correspondent points out the almost unpardonable mistake of including *Asplenium Filix-fœmina* among the shield ferns—only the Aspidiums are included under that term.

THE BOTANY OF PLANT LIFE.—A correspondent from Washington, D. C., compliments the Monthly on the great attention which it is giving to that department of botany which deals directly with plant life. He states that this department of botany is receiving marked attention in his native country of Germany, and he has been surprised that American botanists seem to confine themselves so much to either herbarium work on the one hand, or mere microscopic work on the other. He thinks the field marked out by the Monthly, in dealing with these live questions, must render the work widely acceptable. He makes the suggestion that the pretty little spring flowered, gentian-like plant, called *Obolaria Virginica*, is probably a saprophyte. In all his examinations he has never found the plant with any apparent relation to the earth in which it seemed to grow.

LEWIS AND CLARK.—A correspondent questions whether Capt. Clark's name ought not to be spelt with an *e*—Clarke. It is certainly so spelt in almost all treatises on geographical botany, and this comes probably from Clark's name being so spelt in the title page of the work giving an account of their travels. Biographical dictionaries, however, which we take to be greater authorities, spell the name Clark, as we have already rendered it, and we believe this orthography to be correct. The printing of the title page in the *Travels of Lewis and Clark* was probably a printer's error.

THE NEXT PLATE.—Among the beautiful features of American autumn scenery, few exceed that of the brilliant colors in salt marshes. Inland residents often go many miles especially to enjoy the rare pleasure. This is largely due to the American Marsh-Samphire, *Salicornia mucronata*, and as this will be seasonable, it will be selected as the subject for the Prang chromo for August.

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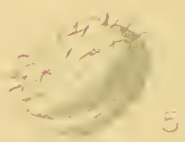
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SALICORNIA MUCRONATA.

VIRGINIAN GLASS-WORT.

NATURAL ORDER CHENOPODIACEÆ.

SALICORNIA MUCRONATA, Bigelow.—Annual, herbaceous, stout, erect, two to twelve inches high, shortly branched; spikes one to two and a half inches long, one and a half to two lines broad, very closely jointed, rather obtuse; scales acutely pointed, becoming divaricate and conspicuous; middle flower a half higher than the lateral ones, or less, occupying the whole length of the joint; fruit imbescent; seed half to three-fourths of a line long. (Sereno Watson, in the *Proceedings of the American Academy of Arts and Sciences*, 1874, and Bigelow's *Flora of Boston*, where, according to Mr. Watson, it was first described.)

During the autumn season, thousands of people go from Philadelphia and New York to the salt marshes near the sea-coast for the express purpose of seeing the beautiful colors which the vegetation of the marshes presents. Though a number of species contribute to the grand effect, the chief burden is borne by the strange-looking plant which illustrates this chapter, *Salicornia mucronata*, or Virginian glass-wort. It grows in dense masses, the areas often acres in extent, intermixed with two other species, which do not turn to as bright a color as this, one remaining quite green; and this admixture of green with the bright red gives a living expression to the beauty, that our usual autumn scenery, remarkable as it is, seldom presents. To the average citizen who goes down towards the sea to admire the carpeted richness of the marshes, it seems a queer plant, indeed. It looks as if it had no leaves; to have had no flowers, and to have no fruit, or anything the popular idea would regard as a seed. If, by chance, some one is curious enough to slit a branch down lengthwise, as in Fig. 3, seeds are discovered. But this only makes the matter more mysterious; for who ever found seeds inside the stem of any other plant? If, however, a botanist be of the party, the mystery is made plain. He explains that many plants have their leaves partially united with the stem. The new leaves usually commence where the old ones branch from the stem, and the branching off to the actual leaf, as we usually see it, takes place at the next joint or node. In our plant the opposite pair of leaves have united their edges, and form a circuit round the stem. They are not long enough to extend beyond the next node, so as to appear much like an ordinary leaf. In this species they have been able to spread out a little, and this gives the pointed appearance we note at Fig. 2, though nothing but a mere "mucro," or little point, in botanical language. It is from this point that the specific name *mucronata* is derived. In the fall of the year these united leaves, surrounding the stem, dry up just as other leaves dry, and leave the stem with its proper epiderm or bark beneath. At Fig. 6, we see it rapidly changing color, preparatory to decay, as the lower ones have done, in time shriveling wholly away, as we see in Fig. 2. The branchlet as it appears to us (section in Fig. 3) is really a spike, differing only from spikes in other plants by the fleshy union of parts which conceal the leading features of inflorescence. The ends, mucronated tips, are almost lost in the spikes; if developed, they would be bracts. These flower-buds are formed in the axils of these bracts; but we see only the tips of the calices as they push up through the succulent mass. These are shown in the enlarged drawing, Fig. 4, the central one being the strongest. Of the reproductive organs, only the tips of the stamens and of the pistils are seen, they lengthening beyond the closed calyx, through which they have had to push their way. Only one anther is seen at a time, but the acute Linnæus noticed that a second followed the first. This theoretical structure of the plant is rendered much more clear by an examination of plants from allied genera, where the passage from the comparatively woody structure to the succulent in this can be traced. *Salsola Kali*, usually growing by the seaside where this grows, is a good kind to take. The leaves in this are not closely united on the edges, as these are, and the tips project into small, fleshy leaves.

Kali and *Salsola* were once the generic names which included what we now know as *Salicornia*, *Kali* being an Arabic name, signifying salt. *Salicornia* has much the same meaning—that is, salt-horn, the horn-like branchlets having a taste of salt. *Salicornia* seems to have been first used by Dodonæus, a botanist of the seventeenth century. It was retained by Linnæus to specially represent the genus as we have it now.

Our species has given some trouble to botanists. There are but few species in the genus, but these are scattered along salt shores over most parts of our globe. But these few species vary much, and there has been difficulty in defining the limits of each. The kind common along the shores of Europe, *Salicornia herbacea*, also grows here, and this species seems to have been mistaken for it by the earlier collectors. Dr. William Salmon, one of the earliest of European collectors in our country, writes, in 1710: "I found it growing plentifully on the salt marshes of South Carolina, as up the Nadmalow river and on the sands of and marshes of Wando river, not far from the seaside, and in other salt marshes of the same country." This is the first account of it, most likely, and it was probably the one we now describe. Clayton, the early Virginian botanist, saw the difference, which is well described by the botanists of that time. They say the plant is "herbaceous, erect, branches quite simple," the European *Salicornia herbacea* being more inclined to spread on the ground, and the branches several times divided. Linnæus, however, though he called the species *S. Virginica*, remarked that he could see little difference between it and the other species. Dr. Gray has recently discovered that, by some means, Linnæus had a specimen of the old species, and not one that Clayton evidently intended. Mr. Sereno Watson has thought best to abandon the name of Linnæus, and adopts the name of *Salicornia mucronata*, as first given to it by Dr. Bigelow in the *Flora of Boston*.

In like manner, much confusion has been made in the common name of the genus. All our leading botanists, Gray, Chapman, Wood and Darby, call it "Samphire." The true Samphire, with which the readers of Shakespeare are familiar, is an umbelliferous plant, *Crithmum maritimum*. In the well-known passage in King Lear: Describing the chalk cliffs of Dover, Edgar says :—

"———————— Half-way down
Hangs one that gathers samphire, dreadful trade!
Methinks he seems no bigger than his head."

It was very popular for pickles. The one who gathered it was let down by a rope from the top of the chalk cliff, several hundred feet above. Ray says that the frutescent species which grows along the English coast was often used as a substitute for Samphire, and hence called "marsh Samphire;" and it is, no doubt, from this that the error from "marsh Samphire" to "Samphire" came about. It is said the name "Samphire" is derived from the French, San Pierre, that is, St. Peter, who is the patron saint of Roman Catholic fishermen, and the plant having a liking for those places where fishermen resort.

In regard to its use in the place of the Samphire, Green says: "Steeped in salted vinegar, the tender shoots are made into a pickle, which is little inferior to the true Samphire, *Crithmum maritimum*."

Along the shores of the Mediterranean immense quantities of the plant were dried and burnt for its ashes during the last generation. The ashes contained large quantities of soda, which was a leading article of trade with France, where it was used in the manufacture of glass and soap. This was how the plant came by its common name of glass-wort. The discovery that pure soda can be made cheaper from common salt has, however, destroyed this trade. The only use now left to it is for forage, cattle being said to be very fond of it.

There seems no occasion to perpetuate the erroneous "Samphire" for the common name, as it is as well known as "glass-wort." We have added the name Virginian, both to distinguish it from the kind which also grows in Europe, and to perpetuate the botanical name under which it has been so long known. It thus connects the history of the name.

EXPLANATION OF THE PLATE.—1. Average plant from Atlantic City, New Jersey; 2. Mucronated tips of minute leaves; 3. Spike, called in the description branchlet, cut longitudinally, exhibiting the seeds; 5. Side view of the united leaves; a, The same, front view, showing the three perianths above; 5. The hairy seed enlarged; 6. United succulent leaves, before withering as they have below.

WILD FLOWERS AND NATURE.

A PERSIAN GARDEN.

"She read of isles renowned in song,
Of skies of cloudless blue,
And flowery plants which all year long
Wore tints of brightest hue;
Of vine-clad groves and myrtle shades,
And hills with verdure clad,
Where rose and henna ever made
The fragrant earth seem glad;
And as she read, the dreamer fair
Sat, wishing that her home was there."
—"MISS PRATT."

QUAKER LADIES.—A Charleston correspondent says:—"From the current number of MEEHANS' MONTHLY, I learn a new common name for *Houstonia cærulea*, 'Quaker ladies.' I have always heard them called in untechnical parlance 'Innocents.' Now my idea of the real Quaker ladies has always been that while they were very sweet and good in disposition and character, they were also very sedate and grave,—whereas these bright little innocents, of all our earliest spring blossoms, seem to me to be in the gayest mood,—ever smiling at one and saying as plain as possible 'Come and be glad with us. Rejoice that the springtime is here.' In upper Georgia and South Carolina the petals of the *H. cærulea* are of the palest blue and most delicate texture, while its yellow throat is like a laughing golden eye."

LIFE IN THE DEAD SEA.—It has come to be a scientific axiom that the waters of the Dead Sea are absolutely destitute of any living vegetable or animal organism. A French investigator, M. Lortet, has now found that even this supposed great truth is wrong. He finds innumerable species of micro-organisms, and they are found to be of a very malevolent character. Animals inoculated die in a few days from the blood-poisoning brought on through the agency of these minute bodies. The river Jordan, which is so popular with pilgrims for bathing, is said to be full of these micro organisms to such an extent as to be absolutely unfit for bathing, and for drinking water almost perilous.

OPUNTIA RAFINESQUII.—A correspondent, referring to our desire for strict accuracy, remarks that Rafinesquii is often spelled with a single *i*—Rafinesqui, and inquires which is critically right? The only rule is the rule of euphony, and this decision rests with the author, while forming the name. The proper name of the party to be honored by the plant s name is to be first rendered into Latin, and if it be a man's name, *us* added, gives it a Latin character. Sometimes, still for the sake of euphony, a word is altered or changed. Rafinesque might be *Rafinesqus*, or *Rafinesquius*, and probably the latter would be considered by most Latin scholars as the most elegant. Now, the specific name of a plant is no real part of a plant's name, except as an adjective. *Opuntia* is the plant's chief name, and it is to be Rafinesque's opuntia. This requires the adjective to be rendered in the genitive case. The genitive is formed in this class of nouns by dropping the one or two end letters, and adding an *i*. Thus we change *Rafinesquius* to *Rafinesquii*. But if *Rafinesqus* should be adopted for the substantive name, the adjective would be *Rafinesqui*, which would not be a euphonious transformation of the owner's name. At any rate we have followed Dr. Asa Gray, who besides being famous botanically, had rare scholastic acquirements.

CYPRESS KNEES. — Considerable attention has been given recently in scientific works all over the world, as to the cause of the protuberance known as Cypress knees. Prof. Wilson, of the Pennsylvania University, has been trying careful experiments with seedling trees, and he finds that they originate by a young root coming to the surface and then bending down again by their tips into the earth. Where the bend is formed the knees ultimately procede. A chapter on the subject in a recent number of the "Gartenflora," by Prof. Rottenheusser, on the Cypress, gives illustrations of the formation of these knees, confirming the views held by Prof. Wilson.

RARE PLANTS IN NORTH CAROLINA.—Possibly in no portion of the United States can the botanist derive more satisfaction than in the mountains of North Carolina. Very little has been known of the flora since Michaux went there, when he discovered the *Shortia*, or rather seems to have found a single flower of which he could make nothing, and which it was left to Dr. Asa Gray to discover in the Michaux herbarium, and work out to be a new flower. Some things which Michaux found, have never been found since, of which the *Robinia viscosa* is a notable instance. The vicinity of the Linville river is one of the localities where good things are especially found. Mr. Vasey discovered, but a few years ago, the very distinct and beautiful *Azalea Vaseyi* in this region, and few go there without getting some rich scientific reward. Even the mere lover of nature, who does not care to go far beneath the surface of her treasure box, finds full compensation.

Our illustration represents the Falls of the Linville. The water shoots down a cleft in the mountain range to a depth at this point of 40 feet.

FALLS OF LINVILLE RIVER, NORTH CAROLINA.

A THREE-HEADED RUBBECKIA.—Mr. H. P. Cressman, of Chestnut Hill, sends a specimen—apparently of *R. hirta*—which though appearing as one head is composed of three small heads. This indicates that the stalk now bearing a single head, might, with some little backing from the occult law of nature under which these affairs are governed, produce a branch instead of a single stem. Very much can be learned of the direction from which plants have started, or in which they may be developed, by these abnormal illustrations.

KALMIA ANGUSTIFOLIA.—Mr. G. C. Morris sends us from Lake George, a specimen of *Kalmia angustifolia*, which is somewhat different from the form of this plant usually found in New Jersey and elsewhere. Instead of the flowers being arranged in umbels, they are scattered along the whole line of the branches. In the specimen which he sends, for over a foot in length the small umbellules are scattered. The flower also is much smaller and considerably brighter than is usual with *Kalmia angustifolia*, as we usually see it—the leaves appear shorter and more oval. It is scarcely distinct enough to be considered a species, unless some other character can be discovered than we observe in the specimen sent; but, as a variety, it is distinct enough to attract the attention of botanists and of the lovers of wild flowers, who flock in summer to Lake George.

BEES IN CALIFORNIA.—In California bees that have deserted the hives have taken to the woods and cared for themselves. They seek out hollow trees, and establish colonies in them. Bee trees, as they are called, are now frequently met with in various parts of California. It is said that they use different kinds of trees, according to altitude; in the higher regions, they use the Pine and the Fir; in lower altitudes, they select hollow Oaks.

VERONICA CHAMAEDRYS.—Dr. Gray states that this beautiful English wild flower has been sparingly introduced into Canada, New York and Pennsylvania. So far as we know, Philadelphia botanists have not hitherto found it in their explorations about that city; but Dr. James Darrach, author of the latest flora of the vicinity of Philadelphia, sends us a specimen which he collected near there.

PRIORITY IN PLANTS' NAMES. — Botanists long ago agreed that when there was any question about the rightful name of a plant, the name first given with a complete description of the plant should be the one generally adopted. In recent years some excellent botanists have gone beyond this, and after a name has been generally adopted, seek to change it, should a prior name by chance be discovered. Some leading German botanists, among whom are the well known Ascherson, Engler, Schuman, Urban, Hoffmann, Kny, Koehne, Krug, Schwendener, Winkler, and Wittmack, have issued a circular, addressed to the leading botanists of the world, showing that this course is ill-advised. The law of priority, they say, was to make nomenclature stable, and must not be interpreted to make it unstable, as the recent efforts would do. The present efforts would require a reorganization of all the herbariums of the world, large and small, which is practically impossible, and which this law of priority was expressely designed to prevent. They say, "we (that is, the botanists of the world) agreed to adopt this rule,—and we (the botanists of the world) can suspend it when it works badly." They therefore propose to get the signatures of as many botanists of the world as will agree to the proposition to retain a large number of generic names which they particularize, though there are some prior ones that have not been generally adopted.

In the list to be retained are the following names of American genera, familiar to American botanists,—*Erophila*, *Ionidium*, *Spergularia*, *Malvastrum*, *Podalyria*, *Oxytropis*, *Desmodium*, *Liatris*, *Mikania*, *Armeria*, *Statice*, *Herpestis*, *Suæda*, *Pilea*, *Spiranthes*, *Liparis*, *Luzula*, *Fimbristylis*, *Rottboellia*, and *Setaria*.

To MEEHANS' MONTHLY it would seem hardly necessary to have such an agreement, as the law of priority certainly implied that priority should be claimed prior to general adoption. These have been generally adopted. But it does no harm to have the signatures.

TOADS AND TADPOLES.—A Philadelphia correspondent notes that in his garden on the 27th of June, he saw a number of young toads no larger than peas—that he always understood toads as well as frogs were tadpoles when young, and that there certainly is no stagnant water or pond within half a mile,—and that almost inaccessible from his garden—where a toad could deposit its spawn.

Our correspondent has been misled by encyclopedias and scientific works, which seldom recognize the observations of the "mere practical man." Through horticultural works, and other mediums of communication to which the "mere practical man" has access, it has long been known that the toad is oviparous certainly when near water, but so gifted by nature with adaptation to circumstances, as to bring forth the young alive—hatching the egg in the oviduct—when it cannot get near water. Scientific treatises admit only the aquatic origin of young toads, on the ground of the impossibility of the fertilization of the ovum under viviparous conditions, and this idea of the impossible seems reasonable,—but there is no getting over the fact that young toads abound so small, that they could never have been tadpoles; and found in places, where, as our correspondent remarks, there is no water for tadpoles to swim in.

HABENARIA PERAMŒNA.—Some fine specimens of this—probably the most handsome of all American orchids—have been sent up by Miss Leaming from Cape May County, N. J. The plant has been regarded as rare in that State.

By the way, it once seemed very clear to the writer, that this, *H. fimbriata* and *H. psycodes*, were very different species,—but it is becoming more and more difficult, as the acquaintance widens, to find good dividing lines. The outlying forms are distinct enough.

A LARGE CYPRESS TREE.—The large cypress tree planted by John Bartram in 1808 in his famous botanic garden, near Philadelphia, is still growing there, and is about 120 feet high and 28 feet in circumference. We give on page 137 an illustration of it. Some excitement was created in Philadelphia by the statement that the city of Philadelphia, which has now control of this garden, intended to cut down the tree and send the trunk to the Chicago Fair. Of course, there was no truth whatever in this rumor, but it tended to show how much interest the public took in preserving fine old trees.

As indicating how really fine this specimen tree is, we give below an illustration of one of the finest that a friend could find in the cypress swamps of Florida. This last illustration will have an additional advantage in giving those who have never seen a cypress swamp, an idea of its thoroughly tangled up and wreck-looking appearance. There is very much yet to be learned of the life history of the deciduous cypress. Frequently large areas are found growing wholly under water, and yet it is evieent that the seeds could not possibly germinate in water where the tree is growing ; so that there must have been a time when there was less water in the locality than exists at the present time. These trees have the singular power of throwing up large knobs from the roots, which are frequently larger than old-fashioned bee hives, and are often hollow, and are actually used, according to some authors, as bee hives. How or why these knobs are thrown up is a puzzle, which scientific men are still engaged in unravelling. At one time it was supposed that the knees, as they are popularly called, were thrown up for the purpose of getting air to the roots, for, although trees may be found growing in water, without they get air to the roots in some manner, they soon die. Possibly the upper portion of these knees, which are extremely soft in the growing season, may have some power of abstracting air from the atmosphere, and in this way may be of the service suggested. This view is confirmed by the fact, that when the trees grow in dry ground, they seldom send up these knobs. The inference is, because they are not needed where the roots can get air underground. This is, however, disputed by others, who contend that the knees are chiefly to aid in anchoring the trees in the marshy ground in which they grow. It is supposed the trees, under such circumstances, would easily blow over, and, therefore, throw up these knees in order to collect mud and rubbish, much as is seen in the picture, and in this way assist to keep the trees in their upright position. It is only fair to say that these propositions are still being discussed, and general acceptance of any one theory has not yet been accorded. It is a point that roots must have air someway.

A CYPRESS SWAMP IN FLORIDA

GENERAL GARDENING.

THE WOODBINE AND THE RUIN.

O'er my head the woodbine blew,
And its flowers were wet with dew,
And sweeter fragrance flowed around
Than ever charmed enchanted ground;
So sweet the scent, that Eden's gale
Seemed breathing through the desert vale.
—PERCIVAL.

BLUE HYDRANGEAS.—A Philadelphia correspondent says: "I have never been able to form an opinion as to what induces Hydrangea flowers to become blue. We have four specimens in boxes, which we place on the lawn in summer. Two are of the old-fashioned rose kind; the other of the pure white, called Thomas Hogg. We have had them four years, and they have been in the same earth since we had them. The rosy kind commenced two years ago to give us blue flowers, and they are apparently bluer now, though not quite open yet, than last and previous years. As the soil has not been changed, it can scarcely be a matter of soil. Again, the Thomas Hogg shows no disposition to depart from the pure white; yet the soil is the same for all four."

The following from Mr. H. A. Herbert, New York, adds another valuable item to this interesting topic:

"In reference to what you say about the flowers of the Hydrangea, blue or pink, perhaps the experience of one who has grown them in the Old World, in the South of Ireland, with great perfection, may be of some use. I have invariably found that Hydrangeas planted in peat or boggy soils will produce a most beautiful blue flower, while those planted in gravel soil or red loam will generally be of a pink color. I have never, to my knowledge, seen a plant in bog soil produce anything but the bluest flower, whilst I have occasionally seen plants in gravel soil of a bluish color, but that was of rare occurrence."

Many years ago a paper appeared in the Transactions of the Royal Horticultural Society of London, to the same effect as Mr. Herbert's experience.

GARDENING AROUND SUMMER HOTELS.—Every traveler in Europe regrets, when taking the same pleasure in our country, that more attention is not given to gardening around our large summer hotels. Of course, when these hotels are built in the mountains, or in some rural spot, gardening is entirely out of the question. People go to enjoy rural scenery, and not so much artificial pleasures; but there are a large number of instances, especially in seaside towns, where gardening would not be at all out of character, and the surprise is that more attention is not bestowed in these cases to this character of decorations. We give with this an illustration on page 143, of the celebrated hotel Victoria at Interlaken, in Switzerland, which is famous all over the world—famous not merely for its magnificence which attract the most fashionable visitors from all parts, but famous also for its beautiful gardens. Without any further detail in this column, the cut itself will explain all that need be said on this subject. Of course, the climate is, in some measure, more suited to fine specimens of gardening than in many localities in our own country. In the picture we see illustrations of Date Palms. The American Aloe is also seen in flower, while Yuccas, Dracænas and dwarf palms form prominent features in the garden decorations.

WASHINGTON PARK, ALBANY, N. Y.—The "Country Gentleman" states that this is one of the most beautiful pleasure grounds in the United States. It occupies about 90 acres; but on account of the diversity of the surface, which is extremely irregular, a very large number of roads and pathways have been able to be constructed, by which its large size seems to be even much greater than it is. For all this number of roads, none of them seem to be unnecessary, or to have been introduced for the mere purpose of making drives. This is one of the great secrets of successful landscape gardening.

Ladies in Commercial Gardening.—One of the interesting points connected with floriculture as a business in the history of the past few years, is the number of intelligent ladies who have taken a hand in the work,—not so much in many cases because of a necessity for going into such occupation, but from the desire to be useful to the community in a business point of view. One of these successful business ladies is Mrs. Theodosia B. Shepherd, who has become quite successful as a florist in Ventura, in California. She has been successful in getting not merely a local trade, but has a business reputation extending over the whole Union. She commenced her enterprise seven years ago with simply nothing but a piece of ground, bought for her at her request by her husband, requiring no further capital from him but liberty to establish her business in the best way she chose. Although only eight years established, the newspapers of California speak very highly of her success. The garden proper occupies a whole block of ground, adjoining one of the large hotels at Ventura City. At first she looked after the whole details of the business herself,—but since it has increased in magnitude, the business is, of course, conducted with the usual business machinery. Besides this large block, on which she has her plant houses, and other structures for propagating plants, she has added, out of the proceeds of her own business, five acres of land contiguous to the city. Rare flowers are among the chief matters attended to, roses being a special feature. One of her hobbies is the improvement of florists' flowers. The Canna is an especial favorite, and a number of large and showy varieties have been the results of her experiments. Some of these are said to be so large as to measure five inches across. The crossing of Begonia, Amaryllis, and other plants, with a view of obtaining new varieties, receives constant attention. In the endeavors to improve the Amaryllis she has raised over two thousand plants a year. In hybridizing Fuchsias, for the production of new varieties, she has also had great success. In the eastern states much attention of late years has been given to bringing up old and almost forgotten plants under new names. The old *Ipomœa bonanox* was christened "moon flower," and another one, *I. pandurata*, one of the worst weeds that ever bothered the farmer, is having a rapid sale as a sort of "day blooming moon flower." There is no question about the real beauty of these plants, and those who have never seen them in their wild condition, will surely appreciate their beauty, whether they approve of their new names or not. Mrs. Shepherd is now introducing another one of this family, namely, *Ipomœa Learii*, which is an ally of the two former, of Mexican origin. It is of the loveliest blue imaginable, and it is rather a surprise that eastern florists did not catch hold of it, and give it a new name, before Mrs. Shepherd undertook its rapid dissemination.

She does not seem, however, to have given it a new name, as other florists do with their introductions. The California newspaper, from which we gather some of these facts, suggests, that the flower might be called the "Heavenly blue,"—certainly, if it has to have a name of popular character, this might be as good as any other. Our point, however, in penning this paragraph was to extend praise to ladies, for the excellent work they are doing in prosecuting useful business,—and to Mrs. Shepherd in particular.

Culture of Ginger.—It does not seem to be generally known that ginger root is not gathered in the woods by natives, as ginseng and other roots of our country are procured, but that it is made a matter of scientific culture in Jamaica. It is propagated by cutting up small pieces of the root, and, if possible, rich, cool soil from recently cleared woods selected for it. It is a great impoverisher of the soil, and grows so luxuriantly that in a short time a little piece of root will spread so as to produce nearly a pound of new roots. The sets are planted in March or April, and get to their full growth about September. The roots are dug usually in Jamaica in January or February. They are washed, exposed to the sun until thoroughly dried, and packed in parcels of about a 100 pounds each. In order to dry them more rapidly, they are first scalded in a little copper pot, in order to destroy life, of which the roots are very tenacious. White ginger and black ginger are from the same roots—the difference arising from methods of curing. Roots for sugar preserving are dug while quite young, before the stems are more than five or six inches high.

GRANDMOTHER'S GARDEN.—This is the title given to a garden in which hardy herbaceous plants find a place. "Old granny" is not usually regarded as a complimentary phrase; but, if it is to be associated with such good things as perennial hardy flowers, it will come to be one of great honor.

ROADS AND LAWNS.—A Connecticut correspondent hopes MEEHANS' MONTHLY will continue to call attention to the proper preparation of lawns and roads. He forcibly says, "lawns, grass, and good roads make the plain basis of gardening for the American people."

THE CELEBRATED BARTRAM DECIDUOUS CYPRESS.—SEE P. 133

RHODODENDRON DISEASE.—The discovery made by MEEHANS' MONTHLY, that in a large number of cases where Rhododendrons have been supposed to be killed by the winter, the real trouble is from the attack of a parasitic fungus, has created considerable interest among scientific men as well as among Rhododendron growers. The fungus is not wholly unknown, but has been described by a French mycologist as *Laestadia Rhododendri*,—but it was thought that the fungus had merely selected the dead leaves as a nidus, rather than as being the cause of their death. Now that MEEHANS' MONTHLY has pointed out that girdled stems on which this fungus is growing, accompany the half dead foliage,—and that the fungus and these conditions are co-existent, there is little difficulty in assuming that the parasitic attack is the cause of the trouble. The parasite has not been much known in America, through having been so long overlooked, and the students in the lower order of fungi are already hunting up specimens for their collections.

Now that we know it is fungus and not frost, spraying with a solution of sulphate of copper will come in as a regular method of treating Rhododendrons.

BIGNONIA CAPREOLATA. — Self-attaching vines are not numerous. *Bignonia capreolata*, is one of these few. It is not found wild north of the Potomac, and seldom planted further north under the belief that it is not hardy. It does not like sun in winter, as indeed few evergreens do. In the partial shade of the large trees in Bartram's famous garden was a fine specimen on a trellis probably half a century old. One of our subscribers, Mr. H. Cramer, in Germantown, has one on the southeast side of his house which covers the wall to the third story, and flowers profusely every year.

EUCALYPTUS TREES.—Notwithstanding experiments repeated and carefully tried in many portions of the warmer sections of the United States, the only points where they seem to be found to do well is in California, or the extreme southern portion of Florida. Even in the States north of Florida, or the northern portion of Florida itself, they are said not to thrive.

ORANGE GROVES.—Mr. H. C. Herbert says: "'The regulation distance for planting Orange groves in Florida is 25 feet by 25. This gives 2800 trees for each acre.' In MEEHANS' MONTHLY, July, 1892, page 108, appears the above statement. Such a statement, coming from such an authority, must be most misleading to the public at large, and certainly those who are thinking of investing in orange groves in Florida. An acre is 10 square chains, or a piece of land 3 chains—16½ links or about 69½ yards on each of the four sides. By planting orange trees at 25 feet apart, it will give about 65 to 66 trees per acre, instead of 2800 trees, as you state. Sixty to 70 trees per acre is what is planted in Florida, at 20 and 30 feet apart, respectively. If you have any means of being able to instruct a planter to plant 2800 trees in each acre, I would feel much obliged for the formula."

[Mr. Herbert has the best thanks of the MONTHLY for the correction. Typographical errors in figures are very liable to be overlooked by proof-readers. If any one would figure 25 x 25 feet=625—they would readily see, as Mr. H. kindly points out, that it gives "between 60 and 70 trees" per acre.—CONDUCTORS.]

TAR-GREASE AND CATERPILLARS.— Many subscribers ask if the composition known as wheel-grease—pine-tar and lard—painted in a band round trees, will preserve them from caterpillars. Scarcely. Caterpillars proceed from eggs laid on the leaves where they hatch and grow. Those which may fall cannot get up again. But there is this advantage in the band that when the caterpillars travel down the trunk, they cannot pass the band, and may be destroyed by thousands with a stiff broom. But this is like locking the door after the horse is stolen.

NATIVE GUANO.—In the old word plans have been found successful to purify sewerage so cheaply that the result has been to extract the fertilizing material, and under the name of Native Guano, sell it at a large profit. At Kingston on Thames, near the Kew gardens, the sewerage of the town goes again into the river Thames as pure as crystal, and is said to be as good for every human purpose as if it fell from the clouds.

JAPAN JUDAS TREE.—Every one knows the Judas tree. A species grows in the South of Europe, and popular tradition has called it Judas tree, from a tradition that it was the tree on which Judas hung himself after having betrayed the Saviour. It is said the flowers were white before, but, as if the tree itself was shocked at the enormity of the offence of Judas, its flowers forever afterwards became red as blood. The European species is called *Cercis Siliquastrum*. In America there is also a species of Judas tree, which is *Cercis Canadensis*. It makes a considerable sized tree, although usually seen more as a bush or shrub. It very much resembles the Judas tree of Europe, but the flowers are paler, and there are, of course, some other botanical differences. From Japan we have now another species, or rather it has been in cultivation for the past twenty years, more or less, but is yet not as well known as it deserves to be. It is much dwarfer than the forms of Europe and America, and has much larger, thicker and more shining foliage. The two species above seem to be a mass of flowers in early spring, and on this account one has been called in America "red bud tree;" but the beauty of these can in no way compare with that of this Japan species. The illustration we give with this shows how densely and thickly the flowers cover the whole leafless portion of the plant. Flowering in early spring, the leaves push out after the flowers have faded. It is not as common in cultivation as it deserves to be, from the fact that it has not hitherto been easy to get any large quantity of it, so as to make it worth the while of any nurseryman to spend much money in pushing it.

JAPAN JUDAS TREE--FLOWERS BRIGHT ROSE.

FRUITS AND VEGETABLES.

EVERBEARING STRAWBERRIES.—The strawberry of our gardens has been improved chiefly from the wild strawberries of our eastern woods and fields, known botanically as *Fragaria Virginiana*. This class usually bears freely in spring, and then all is over. The strawberry of the mountain region and of the Pacific coast is chiefly *F. vesca*,—and is the class from which the alpines, as they are known under culture, are derived. These have always shown a tendency to flower and fruit continuously through the season. The flavor is exquisite,—but somehow they never have been popular with us,—the larger time-saving kinds running them out. For those who are willing to give time and labor to delicious luxuries, it seems a few alpine strawberries ought to be commendable to grow.

THE SECKEL PEAR.—A correspondent calls attention to the fact, "for the truth of history," that the original owner of the parent tree was not of English but of German descent. In support of this view he refers to a letter of Dr. Hosack, of New York, written in 1819, and published many years ago, that it was believed "Seckle got the tree sixty years before from Jacob Weiss, who had built a house in a Swedish settlement near Philadelphia" (Germantown), and, in the details, says: "They were both Germans."

We can only say that we have given heretofore this history as generally accepted—one would suppose all these points had been sifted and decided long before our time. It is however clear from this reference, that the Seckel Pear tree must have been of considerable age even in 1759, for its excellent peculiarities to have had fame at that early date.

HOW TO EAT A FIG.—Francis Gentil, gardener to the Carthusian Monks of the Charter House at Paris, who knew a good thing in fruit when they saw it, writing of figs some three hundred years ago, says,—"If you would eat figs thoroughly ripe, gather those which have a drop of syrup in sight, never take them from the tree in the heat of the sun. Lay them on one side in a basket with leaves in it,—carry them into the fruitery for a night,—the next day they will be refreshed and of a delicious taste."

In the South, where the fig is at home, we have heard the growers say that if you would enjoy a fig to the fullest extent, get up at sunrise, and eat it while the morning dew is on. Has any modern tried Gentil's plan?

ENGLISH WALNUT.—There is quite a fever for planting Walnut trees for the nuts and for timber. There are many places in the Union where they ought to be very successful. The premium spots are on hilly slopes where there is a regular winter temperature. Where there is liability to warm spells in February or early in March, the catkins are brought forward in advance of the fertile flowers,—and there is no crop through lack of pollen. There are trees about Philadelphia a hundred years old or more, which bear full crops two years out of three.

CELERY CULTURE.—Many years ago when the senior editor of this magazine started on his career as an editor of horticultural literature, nothing seemed to him likely to be more popular than a calendar of operations, so as to tell the reader exactly what was to be done from week to week or from month to month,—but with the gaining of extended knowledge of the horticulture of the whole Union, this was found to be entirely out of the question, as a fruit would be ripening in one part, while perhaps it was flowering in another. No greater evidence of this difference could be furnished than the treatment of celery north and south. While in the State of New York, one has to plant celery in August, so as to have it in good use in the winter time; in Florida they only set them out in December, and their plants are actually growing and coming into use while the northern plant is safely stored with sand, or some other element, to preserve it for spring use. On the other hand, celery will keep longer in the north, frequently it may be had as late as May, while in the south it runs up to seed almost as soon as the warm weather comes,—and what is true of the seasons for celery is also illustrative of many other fruits and vegetables.

THE ENGLISH CUCUMBER.—Modern horticulturists take to themselves great credit for the development of the garden cucumber to the extent which it has been developed in their gardens. They think that modern skill has done all the work,—yet so long ago as 1651, figures are given of some of these cucumbers, pretty nearly as large and showy as these of modern times. The longest one that we have ever heard of measured thirty-one inches in length.

THE LAWRENCE PEAR.—Winter pears, as a rule, are not in favor with amateur culturists, on account of the difficulty that they experience in ripening them. Some, however, ripen much easier than others, and the Lawrence pear is one of these. With a very little care in gathering, this variety may be had without much difficulty, in first-class perfection in the winter season. It is, on the whole, one of the best of amateur winter pears.

THE JAPAN PEARS.—Two of these, namely the LeConte and the Kieffer, have become quite popular. The enormous amount of fruit which they bear gives them a great charm with those with whom quantity is of first importance. As a general rule, the fruit is considered, in flavor, far below those of the other class of pears. Those who understand how to ripen pears properly, however, are able to occasionally have fruit of a quality which will compare with anything at all in the pear line. When the preparation of pears for eating becomes a science, as it used to be in the older time, they will have an additional character of value to that of mere productiveness. Peter Kieffer, the raiser of one of these, was a scientific horticulturist, who had learned to put that science into excellent practice. No one who tasted Kieffer pears after he had properly preserved them would care to eat any other variety. As we understand, he simply gathered them a little before they were mature, and ripened them gradually in a cool and not too dry room. It is the rapid ripening which impairs their flavor.

BEES AND FRUITS.—For some reason, bee-culturists contend that bees cannot possibly injure fruits. There is no question about the bees attacking fruits, and, in plain language, running away with them, but it is said that something else injures fruit before the bee can get to work at it. One thing is certain—that, whether injured or not, the fruit would not be carried away except by the bees. This is so evident to Eastern cultivators that no one questions the injury done by bees to ripe fruits. Californians are now awaking to the same facts, and associations are being formed to curb the rights which bee-keepers claim of allowing their bees to forage on the fruit gardens.

SWEET AND SOUR APPLES.—Some varieties of apple occasionally bear fruit that is unmistakably of the sweet section, and others that are unmistakably of the sub-acid or sour class, all on the same tree ; and, again, some portions of one apple will be sweet and the other portion sour. There is a legend that this is a distinct variety of apple, and was originally intruduced by bud grafting, that is, the split buds of the sweet and sour apples were tied together, and afterwards grew, uniting the two fruits in this way. This is but a legend, however, it has no measure of truth.

THE MOREL, MORCHELLA ESCULENTA. — The delicious character of the common mushroom is well known of old, and the epicureans in these days could scarcely get along without it. There are two very close relatives, however, which are generally supposed to be even more delicious than the mushroom, and yet very little is known about them in our country. These are the Truffle and the Morel. The Morel, indeed, is believed to be the quintessence of epicurianism. The writer of this

THE MOREL, MORCHELLA ESCULENTA.

believes that he has found the Truffle in America, but he cannot quite recollect the circumstances ; and similar statements have been made in various publications of a scientific character, although at this writing reference cannot be made to the exact particulars ; but the Morel is not uncommon in our country, and it is chiefly with the view of drawing the attention of our observing readers to its value that we give the annexed illustration from the *Gardeners' Chronicle* of the Morel as it appears in the old world. Judging by the violets which are figured as growing around the Morel, it must be found there in the early season of the year. This accords with experience in our country of a Montgomery Co. (Pa.) farming friend, who says: "We look for them about apple-blossom time, around old tree stumps. They are tougher than mushrooms, but real good for all."

BIOGRAPHY AND LITERATURE.

OLD FRIENDS.

A stone unturn'd, is sweeter than a strange or alter'd face;
A tree, that flings its shadow as of yore;
Will make the blood stir, sometimes, when the words
Of a long look'd for lip fall icy cold.
—N. P. Willis.

Godfrey Zimmerman.—Mr. Godfrey Zimmerman, famous as a successful horticulturist over many parts of the Union, died at his residence at Pine Hill, near Buffalo, June 29th. He was especially prominent in fruit culture, and for many years was a leading member of the American Pomological Society. He was interested in every branch of intelligent gardening, and kept up his interest in them, and especially in fruit growing to the last. Some of his communications on fruit growing, to leading gardening papers, had great value in advancing fruit culture in America. He established the Pine Hill nurseries, near Buffalo, in 1840, only seven years after coming to Buffalo by the only line then in existence, the "Erie Canal Packet Boat," and grew up with the growth of the city. He was born in Alsace, April 29, 1815. Aside from his devotion to gardening, few men were more beloved for their personal traits than Godfrey Zimmerman.

Dr. Joseph Leidy.—Memoir by Dr. W. H. W. Ruschenberger. In one of the earlier issues of Meehans' Monthly, there was a notice of the death with a portrait of this great naturalist. By request of the American Philosophical Society, his colleague in the Society, Dr. Ruschenberger, has prepared a memoir of Dr. Leidy's life and services. One scarcely knows which most to admire,—the great care and research which has brought together in a short memoir so much of the life-work of this eminent man,—or of the man of whom the story is told. The portrait which accompanies the memoir is among the best of Dr. Leidy that has yet appeared.

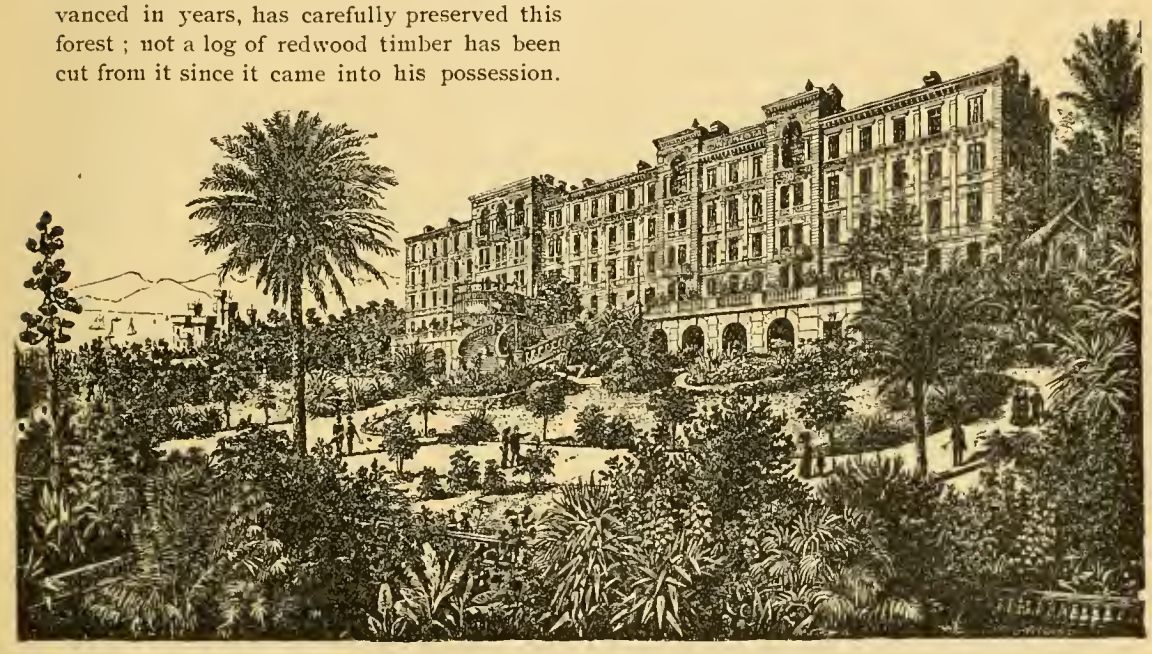
Charles Joly, Vice-President of the National Horticultural Society of France.—It has often been remarked that all great societies have periods of dormancy, and then of brilliant fame and utility. At the present time, and for some years past, the National Society of France has had an unusually active career, due in a great measure to the energy of Mr. Charles Joly. His report of the International Jury, now on our table, gives judiciously the best points of progress made.

Mr. John Robinson.—This excellent botanist has been appointed to the position vacant by the death of the lamented Dr. Sereno Watson. He has received special instructions to continue the work on Dr. Gray's Synoptical Flora of North America, which Dr. Gray so earnestly hoped to live to see completed. The selection insures a continuance of the work on the plan originally adopted by the great botanist.

W. C. Strong,—Fruit Culture.—Under this title Mr. W. C. Strong, of the Waban Nurseries, near Boston, issued a little book on fruit culture, including hints for the laying out and management of a country home. This was only seven years ago, and this is the third edition,—one of the best tributes to its usefulness. It is just the thing for amateurs. It is issued by the Rural Publishing Company of New York.

Prof. C. S. Sargent.—Though on a long journey to Japan in the interest of American forestry and gardening, Prof. Sargent is not missing anything that is worth seeing along the way. He spent the last three days of July examining the beautiful grounds of World's Columbian Exposition at Chicago. It is perhaps a selfish thought, but we are looking for much profit from the Professors' great labors.

Botanic Garden for California.—"The Pacific Rural Press" states that Col. J. B. Armstrong, of Santa Rosa, has donated in trust 640 acres for the preservation of the redwood timber land in Sonoma Co., and the construction of a botanic garden. The trustees are, his daughter, Miss Kate Armstrong; A. E. J. Wickson, of the "Rural Press;" Charles Howard Shinn, the bright and intelligent horticultural writer; Luther Burbank, the great experimenter in hybridization, and Robert Underwood Johnson. They have accepted the trust. The tract is on the north bank of the Russian River. Col. Armstrong, now far advanced in years, has carefully preserved this forest; not a log of redwood timber has been cut from it since it came into his possession. All that will be done at present is to look after the preservation of the redwoods, but the work of the garden will be gone on gradually. It is believed that the garden can be made self-supporting. Although it has no endowment at present, it is said to be worth, as it stands, $150,000. Col. Armstrong is an Ohio man. He has been for several years the owner and editor of the "Santa Rosa Republican."



GRAND HOTEL VICTORIA, INTERLAKEN SWITZERLAND.--SEE P. 135.

Vilmorin.—Through several generations of houses of Vilmorin, of Paris, have not only been among the leaders in horticultural commerce but have also rendered great service in many ways to horticultural literature. Another member of the house Ph. L. de Vilmorin, now appears in the same admirable line of usefulness, as the author of the work called Les Fleurs a Paris. This describes the work of the commercial florist, telling how they grow flowers for market, and giving a list of the principal plants which are employed in the work of the Parisian florists. It is interesting to note that among the more popular of the flowers of Paris orchids and roses seem to stand at the head. Mosses and ferns, however, are largely employed. The whole subject of the cultivation and arrangement for market is treated in this volume.

Miss Mary E. Murtfeldt. — Outlines of Entomology. Miss Murtfeldt, is one of the most eminent of American Entomologists,—and at the request of the State Board of Agriculture of Missouri, has published this work for the use of farmers and gardeners, by which they will easily learn the main points desirable for them to know about insects. There are some so ignorant of what is every day about them, that they could not tell the difference between a bug and a beetle,—or between a moth and a butterfly,—but they would know considerably more than this, without much effort, after a brief study of this useful work.

Miss Murtfeldt's address is Kirkwood, Mo.

GENERAL NOTES.

THE CONDENSED CHARACTER OF MEEHANS' MONTHLY.—Possibly in no enterprise in which the Senior Conductor has ever been engaged, has congratulatory comment been so profuse as in relation to MEEHANS' MONTHLY. The following from Mr. N. F. Cressman, of Chestnut Hill, Pa., is selected, because it covers a point on which the conductors especially pride themselves, and which they are pleased to see appreciated,—namely, the condensed character of the information given. They feel that it would be quite easy to get out a magazine of sixty pages per month, and really tell no more than is told in these sixteen.

"I am more than delighted with your Monthly, and read *every word* from beginning to end, and "cry for more." Your chromos are true to nature and your reading matter varied enough not to be monotonous. My best wishes for your success."

In these days, when there is so much to read, we regard this condensed system by no means the least merit of the magazine.

OUR CORRESPONDENTS.—Many friends, in speaking of our magazine, note our paragraphs from correspondents. Editors of all papers of any description strive to enlighten the community at large. We find that small items which interest one are sure to interest many others, especially if the subject is one which can be understood and appreciated. Our thanks are always due to those who send us any hints or items which come to their notice.

OMPHALODES VERNA.—"Flowers like a fig tree," must have startled the reader of the last issue,—and just how the compositor should have made this out of "Forget me not," as written, passes human comprehension.

CHALLOS.—At page 56, where we give this as the common name of a Californian plant, a correspondent from California suggests that it should be Challos, as written above, and not Chollas.

LEGAL WARFARE AGAINST WEEDS AND INSECTS.—We have called the efforts to get rid of weeds, insects and fungus diseases by law, "vicious," because the execution is generally in the hands of ignorant persons, who draw large salaries and do no appreciable good. There are just as many daisies and buttercups in the pastures of Pennsylvania as before the "weed law" was passed, and so it ever is. In the effort to keep insects and diseases of fruit trees out of California, the *San Francisco Chronicle* boasts that last season $11,000 worth of Eastern nursery stock infested with yellows and plum curculio was burned. How any one could tell that a one-year-old peach tree, packed in a case, had the yellows, or how they discovered the larvæ of the curculio on a plum tree, is marvelous. But this is the way these legal experts work. No magazine is more ready to aid in getting rid of weeds, parasitic fungi or destructive insects than MEEHANS' MONTHLY, or would more earnestly second intelligent effort; but these wild attempts are certainly vicious and barbarous.

LANDSCAPE GARDENING ON THE CHICAGO FAIR GROUNDS.—*Garden and Forest* gives great praise to the Chicago Commission for the intelligent manner in which the landscape gardening work of the Fair grounds has been executed. It says they have secured the services of the most eminent architects and landscape gardeners, who have been able to work together in perfect sympathy; and the result is that they have established a specimen of landscape gardening which places the art in its proper high position in this country among the arts of design.

OUR NEXT PLATE.—In the next edition of this magazine will appear a colored plate of a plant which we know will not fail to please and interest every one. We speak of the *Spiræa lobata*, commonly known as Queen of the Meadow, and by some Western writers as Queen of the Prairie.

SPIRÆA LOBATA.

QUEEN OF THE PRAIRIE.

NATURAL ORDER, ROSACEÆ.

SPIRÆA LOBATA, Jacquin.—Perennial herb. Flowers perfect, in long—peduncled paniculate cymes; leaves coarse, pinnately lobed, the terminal lobe very large, reniform, seven to nine-parted, with the divisions incisely toothed and serrate; stipules reniform, persistent; follicles six to eight, one to two-seeded. (Chapman's *Flora of the Southern United States*, Gray's *Manual of the Botany of the Northern United States*, and Wood's *Class-Book of Botany*.)

When this plant is seen in flower in the summer time, it is especially attractive by its regal beauty; but the collector who might chance to meet with it in early spring when nothing could be seen but its strong root leaves, would be very likely to pronounce it a coarse, weedy thing. A weed is not necessarily coarse; to be a weed is simply to be a plant in cultivated ground which the cultivator does not want; and the most elegant or beautiful flower, as well as the most homely one, might be a weed in a garden, but a pretty wild flower when in uncultivated ground. Still custom associates coarseness and rankness with the idea of a weed, just as we have used the word here. But the summer beauty of this plant will amply make amends for the coarseness of its spring attire. When in flower it is doubtful whether even the lily would be able to get a decisive vote in favor of its superiority, when the Queen of the Meadows was standing by.

Besides the expressive common name of Queen of the Prairie, different writers call it Queen of the Meadows,—and Riddell, the early Western botanist, in his catalogue of Western plants, issued in 1834, refers to it as the "Pride of the Prairie," showing that under these familiar names the plant has been known for a long time to those who have observed the beauty of our common wild flowers. Some authors call our plant "Meadow-sweet," and Professor Gray and Dr. Chapman, in the works already cited, employ this common name for the whole genus *Spiræa*,—but this does not seem to be sanctioned by English usage. Drop-wort or sometimes goat's-beard seems to be the favorite name for the genus, and "Meadow-sweet" is confined to *Spiræa Ulmaria*, and with which our present species is very closely allied.

It is interesting to note the history of popular names in connection with wild flowers. In the present case, "Queen of the Meadows" is no doubt derived from the plants similarity to its relative from the meadows of the old world,—but even there, Dr. Prior tells us, the original name had nothing to do with meadows. Mede or mead is often used as a synonym of meadows, and this plant was once commonly used to give a peculiar and popular sweetness to mead, a preparation from honey, and was simply the mead-sweetener, or mead-wort, and from this has been derived "Meadow-sweet," "Queen of the Meadows," and so forth. Hill, in his Herbal, says, "the flowers mixed with mead give it the flavor of Greek wine." Salmon, the herbalist, also refers to this property. "Its leaves," he says, "have a pretty sharp smell and taste, very like unto *Burnet*, and will no less give a fine relish to a glass of wine, if a few leaves thereof be put therein." Our species has also sweet scented leaves. Dr. Gray compares the fragrance of the bruised leaves to the odor of the Sweet Birch, and Torrey and Gray to that of the "Winter-green"—that is *Gaultheria procumbens*. The odor, however, so grateful to human beings, was once thought to render the plants distasteful to cattle. Linnæus in the "Flora Lapponica," published in 1737, makes a great point that dumb animals know instinctively what to avoid, and gives a long list of animals that will not eat the common Drop-wort of Sweden; but subsequent observers have found that hogs are very fond of the Drop-like tubers which give *Spiræa filipendula* the name,—and some other creatures eat freely of the leaves of *Spiræa Ulmaria*, the one to which our species is the most closely allied. The supposed abhorrence of cattle to use it has, however, obtained a place for the plant in polite literature. Those fond of imagery

were struck by so beautiful a plant having no known use, and the idea has been worked into poetry in various forms. A French writer tells us that "the Meadow-sweet, called likewise Queen of the Meadows, is considered a useless beauty, because doctors do not find any virtue in it, and animals refuse to eat it. For this reason it has been made typical of uselessness by floral emblematists. It may be remarked however, that Shakespear, who was generally alive to any of these popular impressions concerning plants, makes no mention of this one in any of his works. It may not be quite correct to say that it is useless medicinally. The writer of this has known excellent results from the use of poultices or washes of the leaves in obdurate ulcers or absesses."

Our plant would have been known in the past as *Ulmaria* botanically—meaning with leaves favoring the Elm. *Spiræa* is the name of a plant referred to by the Greek writer Theophrastus, but with every chance against the probability that it had any relation to plants we know as *Spiræa*. But the name was given to them by authors just preceding the time of Linnæus, who took it as he found it, on the reorganization of botanical nomenclature in the middle of the last century.

As *Spiræa lobata*, our plant was described by two authors, Jacquin and Murray, about the same time. It is often given as the *Spiræa lobata* of Murray; but Mr. Watson, the latest authority on the bibliography of American plants, accords the honor to Jacquin.

In its geographical relations it is comparatively circumscribed. Pennsylvania is given as its most Northern location in the Eastern Atlantic States, though the writer has never collected it there,—but there is a specimen in the herbarium of I. C. Martindale, gathered by J. S. Moyer, near Spinnerstown, in Bucks county, Pa. The plant is commonly cultivated in most of the old gardens of the Pennsylvania Germans, doubtless from Pennsylvania wild plants originally,—and it was from one of these that our drawing was made. It extends West to Michigan; Chapman locates it in "Swamps along the mountains of Georgia and North Carolina Northward." So far as the writer of this is aware, it has not been collected beyond what is known to botanists as "beyond the Mississippi river."

Those who have been able to see it wild, and to note the effect it must have on natural scenery, must have enjoyed a beautiful sight, which those who have not had this pleasure may well envy. However it is remarkably easy of culture, and will be found no less beautiful as a garden plant in ordinary garden soil, than in its native swamps of which Chapman speaks. Once planted it holds its own year after year without any particular care or attention. It flowers in Germantown in July, but various periods earlier and later than this have been given by different authors.

Spiræa lobata affords a good illustration of a point brought prominently to the attention of scientific men by the late Professor Asa Gray—that there exists a remarkable relationship between the flora of that portion of the North American continent which lies east of the Mississippi, and Japan. In many cases precisely the same species are found in both places; and in other cases the species, though differing, are so closely related that the boundaries between them are very slight. A neighboring species to the one now in question, *Spiræa Aruncus*, is identically the same in each locality, and *Spiræa palmata* of Japan is so closely related to our Queen of the Prairies that the first impression, when the Japan species is first seen in flower, is that they are both the same, though a critical examination shows good botanical distinctions. An interesting feature connected with these close relationships is that, where the species are identical in both countries, the localities in which they grow are similar; while where they are closer related, the conditions of growth are not quite the same. Thus, while ours affects low, grassy places, the Japan species is found in mountain regions. There are two deductions suggested by these facts. One is that there may have been at some period of the earth's history a much closer connection by land between Japan and eastern North America than exists at the present time; and the little change in specific character, between the species to which this chapter is devoted and the Japan form suggests that a change in plants is in some respects due to the environment.

EXPLANATION OF THE PLATE.—1. Leaf and section taken from the middle of a flower stalk that was about three feet high. 2. Upper portion of the flower stalks. 3. Enlarged flower.

WILD FLOWERS AND NATURE.

AUTUMN.

"Then came the Autumn, all in yellow clad,
As though he joyed in his plentious store,
Laden with fruits that made him laugh, full glad
That he had banisht hunger, which to-fore
Had by the belly oft him pinched sore:
Upon his head a wreath, that was enrold
With eares of corne of every sort, he bore;
And in his hand a sickle he did holde
To reap the ripened fruits to which the earth had yold (yielded)."

—SPENSER.

LEAVES IN A PEACH STONE.—The *California Fruit Grower* states that a Mr. Mexley brought to the attention of the editor of that journal a case in which the cotyledons of the peach kernel had developed into perfect green leaves inside of the kernel; though it is inclined to believe that in some way or another a branch from outside penetrated the peach and got into the stone. The probable explanation, however, is that the young plant had germinated inside the fruit. This is not unusual with other fruit. In the orange it is not at all uncommon to find the seeds sprout and have green leaves, and we think it has been noticed in the squash and cucumber. Some objection might be made to the fact that the leaves are green, and that it takes light to make green in the leaf; but it is now known that the elements of color, although produced by light may be stored up for years in the embryonic growth. Quite a number of seeds have been noticed in which the cotyledons are green.

OUR HEMLOCK SPRUCES.—When reading about the mammoth trees on the Pacific coast, we forget that, in the eastern States, we have also trees that are considerably larger than people generally believe to exist. In relation to the spruce, for instance, Mr. C. Moore, of Trenton Falls, N. Y., tells us that the Hemlock frequently, in that part of the world, reaches 29 feet in circumference. These are certainly mammoth trees in the eastern States; probably few of the readers of MEEHANS' MONTHLY understand that this beautiful tree ever attains such large dimensions.

PERSISTENCY OF PLANTS.—A lady of Massachusetts, who hopes we will not "print her name," but who was a companion, frequently, with the late eminent botanist, Prof. John L. Russell, in his botanical excursions, gives the following interesting facts as to persistency of plants under some circumstances, without their making any increase in growth. She says: "In 1868, Mr. Russell heard of two plants of *Trillium erectum* in a certain place between Swampscott and Salem—and one day—it was May 12th—for I marked it at the time in my Gray's Manual—we went to the place and found the two plants, only two, and not another one to be found anywhere in the vicinity. It was a rare find for that place, and several years after we kept track of those two plants. There was no increase and always two. I have known nothing of the place for a good many years, for I have no one to scour the country with and so have lost all knowledge of that spot. Mr. Russell had a few plants growing in his garden, and after his death I took up the clump and transplanted it to my wild garden, and there they bloom every year; but there are no more plants than there were nineteen years ago when I dug up the clump. Several years after Mr. Russell's death, his widow went to Louisville, Kentucky, and from there she sent to me by mail, two roots of *Trillium sessile*—some *Claytonia Virginiana* and *Dentaria laciniata*. The Trillium did not increase at all for several years, but now there are two large strong plants, and about a dozen seedlings, and each has a bud. We have *Trillium grandiflorum;* there are several clumps, but there is very little change in them from year to year."

HIBISCUS MILITARIS.—Mrs. J. H. Lanning, writing from Minneapolis, states that though "Gray's Manual" limits the range of this plant from Pennsylvania to Illinois, and southward, it is found growing plentifully near Mendota, Minn. *Nelumbium luteum* is also growing plentifully in Pickerel Lake.

JAPANESE LACQUER TREES.—The tree which furnishes this beautiful black Japan is very closely allied to the American *Rhus venenata*, or, as it is generally known, the poison Ash. Some experiments made in collecting the gum from this tree by the writer of this paragraph several years ago, seem to indicate that it was of similar character, but this would have to be proved by closer experiments than can be given to it by the writer. It is now stated that the large Japan species has been introduced by the German government, and found to be entirely hardy at Frankfort, and that a professor has been sent to Japan to study the method of extracting the juices and manufacturing the lacquer. As for collecting the juices, that manner is already known ; moulds are placed around the tree, and the juices suffered to run from wounds made from above the moulds. It is remarkable that the flow of sap has been found to be just the reverse of that which takes place in our sugar maple ; with that the sap is more abundant on cold days, and especially right after a frost,—while in the case of the sap of the Lacquer tree, its flow is most abundant when the weather is warm. Long ago we have thought that our own poison Ash could be brought into use just as well as its brother in Japan, only for the fact that so many people are poisoned by coming in contact with it. It is far more poisonous to most people than the ordinary poison vine, which is *Rhus toxicodendron*.

ŒNOTHERA SPECIOSA. Miss Maria Pinckney of Charleston calls attention to the fact that this pretty Texan species, introduced originally with grain, has become naturalized, in the vicinity of that city. She calls attention to Grant Allen's speculation about coarse weeds driving out weaker native vegetation. Unfortunately for his speculations very small weeds become naturalized as freely as large ones. They become wild and get a good headway by accidental circumstances, and not by any great power in themselves to struggle for existence. Garden weeds for instance, like chickweed and draba, get a foot hold simply because they ripen their seeds before the gardener's hoe, or farmer's harrow, turn them up,—and these seeds form the crop for the ensuing year. Similiar lessons could be given for the success of most other weeds.

PRONUNCIATION OF PLANTS' NAMES,—There are frequent discussions in scientific papers as to how plants' names should be pronounced. Some contend that a name derived from a Russian botanist, for instance, should be pronounced as a Russian would pronounce it ; and names derived from German, French, Italian, or other regions should also follow the same rule. It should be remembered, however, that these names are Latinized when they become botanical names, and should, therefore, follow Latin rules of pronunciation. This makes the pronunciation of plant names comparatively easy. Every vowel has to be sounded, and consequently the name can be very readily divided into syllables ; the only difficulty then will be in the accentuation. For instance, there may be a dispute as to whether Clematis should be pronounced Clem-a-tis, or Cle-ma-tis, but so far as this is concerned, there is no general rule, for custom is the law of language ; and so far as this particular plant is concerned, it is conceded that an intelligent person may pronounce the name either way and not be thought wrong.

PENTSTEMON PUBESCENS.—Different friends write to us about the effects of particular plants on wild flower scenery. One of the most striking scenes the writer ever enjoyed was in an abandoned corn field in the vicinity of the Gettysburg battle field, which was a perfect mass of this pretty plant. Its light purple flowers could be seen for a quarter of a mile away. It seems to like dry, open places, just as most others of its class do on the dryer plains of Kansas, Nebraska, and Colorado, which seem to be the great home of the Pentstemon family.

THE YELLOW CORAL HONEYSUCKLE. — In 1810 John Fraser, a Scotch collector, found *Lonicera flava* on Paris mountains, near Greenville, S. C. It has been known till recently only in gardens. It has since been found by Mrs. J. G. Smythe near the spot where Fraser first found it. Mrs. J. S. R. Thompson, of Spartanburg, South Carolina, has had it in cultivation since 1884, from the Fugen mountains—a spur of the Blue Ridge ; these are about thirty miles south of Asheville. This is not such a rapid climber as those in culture from Fraser's discovery.

NATIVE LOCALITIES FOR CONIFEROUS TREES.—Some coniferous trees are found at elevations little above the sea; but the natural home of the coniferæ is in high mountain ranges. Even in regions almost tropical they are found on tall mountain tops should any exist. When, therefore, we are told that this or that spruce or pine will not do in some locality, it is usually because of being set in the scorching sun or some other hot place. Within the writer's recollections of travel, the mountains of North Carolina have impressed themselves the most strongly by their wealth of coniferæ. In the last issue of MEEHANS' MONTHLY, a sketch was given of a scene in which Frazer's Balsam figured largely. Now appears an illustration of another, in which the black spruce figures. This is on the Grandfather Mountain, and is at an elevation of 5,300 feet. For many years the beauties of these mountains have been as a sealed book to travelers, but the hand of improvement has reached them, and avenues for coaching opened up. It will not be long before the region will be as popular for summer travel as the famous Adirondacks.

BLACK SPRUCE FOREST ON THE GRANDFATHER MOUNTAIN, N. CAROLINA.

VIGOR OF INTRODUCED PLANTS.—For a long time it was supposed that nature put every thing just where it was to the best advantage—that is to say, that the interest of the individual was the primal thought, so to speak, in nature. It is now generally conceded that nature cares but very little for the individual, but that the individual is rather an instrument for her own wise purpose. This is particularly exemplified in the case of swamp plants. These grow somewhat better, and in every way enjoy themselves, as one might say, on dry land than in swamps; and it has really been found that the chief reason why they are found in swamps is that the seeds grow better in moisture, and the plants consequently have to live and grow where the seed sprout. This is also the case with geographical localities as well as local conditions. Many plants frequently thrive much better when they get in foreign countries than in a place which one might perhaps call their home. Our own country is full of weeds, which thrive with the greatest audacity, while scarcely finding an existence in the countries from which they come. What is known here as the Canada thistle, which is really a native of the north of Europe, is an illustration of this. It is by no means a terror to the European agriculturist, but in our country it is one of the worst of the farmer's pests. Another illustration comes to us from Australia, cultivators there are complaining about the sweet brier. It is considered there quite as big a nuisance to the cultivator as the Canada thistle is with us; and, strange to say, the Cardoon, which we have recently referred to as a vegetable quite desirable to cultivate, is so overrunning the plains of South America that a large number of native plants have already been crowded out by it. Nothing like it has been seen in the old world, or in this portion of the new. It is evident from all these instances that the cultivator cannot learn much by taking nature as a pattern of propriety.

THE JERUSALEM ARTICHOKE.—A singular discussion is going on in the old world as to the native country of the Jerusalem artichoke. It so happens, as any one can see by reading Ray's History of Plants, that some one got hold of an herbarium of North American plants and supposed that they were Brazilian. A large number of these plants have, therefore, been credited to Brazil, and the artichoke among them. It was supposed that every intelligent botanist at this time knew of this blunder. The Jerusalem artichoke is perfectly hardy even in Canada, and it would be remarkable that a native of Brazil should have this unusual hardiness. There is very little doubt in the minds of those who have studied this matter closely, but that this plant is simply an improved variety of *Helianthus doronicoides*. The writer has often found tuberous roots to this species of sunflower, very little inferior to some Jerusalem artichokes.

POISONOUS LEGUMES.—Many plants of the leguminous family have been suspected of toxic properties. Our common *Crotolaria* and the Lupine have been more than suspected; and on the Plains there are representatives of this family called loco weeds, which are said to drive cattle crazy, and among which *Oxytropis Lamberti*, and *Astragalus mollissimus*, are classed as the principal species in this bad work. Closely related species in Australia are found to be as vicious. Baron Von Mueller states that the beautiful *Templetonia egena* is so virulent that a woman died within an hour after taking a cupful of an infusion in mistake for some other plant.

TREES ON OLD WALLS.—A lady who gives close attention to what she reads, makes the following sensible comment on a recent paragraph :—"The Mountain Ash, seven feet high, on top of a Utica Church tower, must be an interesting sight. I have often observed tall herbaceous plants and shrubs growing in mortar crevices of brick walls in ruins, but not so tall as the Utica Ash or we might say the 'Eiffel' Ash. How are these plants nourished, when thus lacking the bed of soil or earth and its sources of nutriment. Does not the terrestrial plant in such situations take on the character of the epiphytal?"

SPIDER FLOWERS.—A number of curious plants are denominated "spider flowers,"—but the most realistic spider flower is one which some species of spider actually form. Every one knows the spider's web, but there are some spiders that do not make webs. They are bright colored, and mix in among flowers, as if they were genuine portions of the floral structure. They have no difficulty in making victims of insects so large as honey bees, which indeed often become the captives of these masters in the art of guile. To our mind color is often given to creatures for opposite reasons to those frequently offered. Mr. and Mrs. Peckham, who give much time to studying the habits of spiders, have recently published in the "Papers of the Natural History Society of Wisconsin," some account of the object of color at special times, in male spiders. They believe it is to make them specially attractive to other members of their family. It seems strange that such terribly cruel creatures as spiders should ever be smitten with the tender passion, but so it seems, among the contrarieties of nature.

MIMICRY IN INSECTS.—A number of creatures resemble in color or appearance the leaves among which they dwell, and it has been taught that in some unexplained way these creatures have assumed or been given these characters in order to protect themselves better from their enemies. If the term mimicry means anything, the understanding is that they have assumed these forms for a purpose. At any rate, the resemblances are often striking. Near Fort Ternate in the East Indies, an ancient writer remarks, the Indians believed the fallen leaves of a shrub, they called *Catopa*, were transformed into butterflies. At a recent meeting of the Academy of Natural Sciences, this butterfly was exhibited. They were fastened to a branch with dry leaves of the beech, and it was certainly difficult to tell which were the dry, brown leaves, and which were the brown butterflies. The butterfly is named *Kallima paralekta*,

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CERCIDIPHYLLUM JAPONICUM.—Prof. Saunders tells us that this beautiful Japan tree has been found perfectly hardy so far north as Ottawa, Canada.

GENERAL GARDENING.

THE FROST-STRICKEN GARDEN.

"I have no stately dahlias, nor greenhouse flowers to weep,
But I passed the rich man's garden, and the mourning there was deep,
For the crownless queens all drooping hung amid the wasted sod,
Like Boadicea, bent with shame beneath the Roman rod."

—MRS. SIGOURNEY.

CARNATIONS IN WINTER.—A Chestnut Hill correspondent suggests that the care of carnations in the house during the winter, would make a good paragraph. He has found them troublesome. Possibly of many kinds of plants the carnation is the least fitted to be a room plant. Few things are so sensitive in regard to an abundance of light. Even florists who have carnation houses find a great difference between plants grown in old houses where the laps in the glass by age make a slight difference in the amount of light, and those grown in bright clear houses. The brightest and best of the houses are always chosen for carnations. Outside of the lack of light there is no other trouble more than falls to any other plant.

CHRYSANTHEMUMS.—This is the season of the year when those in search of new varieties of Chrysanthemums lay in a supply of young plants. In former times we had to go to the British Islands (the first improved kinds originated in the Isle of Jersey) or France for improvements. Now America is conceded to be far ahead of the rest of the world in Chrysanthemum improvement. We are led to these remarks by receiving a catalogue of 51 pages, almost wholly devoted to descriptions of the many popular varieties of this beautiful flower. To those who love to study this glorious autumn flower critically, such a full catalogue will be of the highest value. It is issued by T. H. Spaulding, Castlewood, Orange Co., New Jersey.

GLYPTOSTROBUS SINENSIS.—Judging by descriptions in botanical works, there ought to be something in China under this name, distinct from our "bald cypress," *Taxodium distichum*. But everything under cultivation bearing this name is simply *Taxodium distichum* with revolute instead of distichous leaves. A specimen for name from an Illinois botanist, who found the tree in a graveyard, suggests this note.

GERMAN FLOWER SEEDS. — It is said that America is a far better customer to Germany than any of the older nations of Europe,—that the cheap labor and fine climate especially adapts Germany to flower seed raising. One of the leading features of these seed growing German farms is the stock, or stockgilly, as it is popularly called. They are first raised in pots, one plant to a pot, and after being well established, are planted in open ground. It is said that one seed farm in Germany has 300,000 pots of stockgillies alone each season.

CHRYSANTHEMUMS IN JAPAN.—The *Journal of the Japan Horticultural Society* says, Chrysanthemums commence to flower at Tokio, 20th October, and are over about the 10th or 15th of November.

INTELLIGENCE OF THE ANT.—To one who has leisure to sit in his garden and enjoy the pleasures of life, few things will afford more material than watching the behavior of the ant. Noting one traveling backwards, dragging through the closely shaven lawn grass a dead fly many times larger than itself, it was determined to wait for the end of the journey. It was found to be to a nest in a flower-bed eighty-four feet from where the ant was first observed. How far it had traveled before this was unknown. It deviated very little from a direct line to the nest, and only apparently to avoid obstructions. If the ant had traveled on some beaten path, where odor or some recognized object might serve for a sign-post, it might not seem so remarkable.

SKINNING AN ORANGE.—It is said that a small instrument has been invented by which an orange may be neatly peeled without soiling the hands. This good result can be readily obtained without anything special if one only knows how. The fibers of plants, including the fibers of oranges, all fork from the bottom upwards, and it is the attempt to split anything against the grain which makes splitting difficult. If one wants to peel an orange without soiling the hands, all that is necessary to be done is to cut with a knife a very small circle around the stem end, and tnen mark dividing lines from the stem to the summit—at points on the surface of the orange. The skin can then be drawn off just as easily as one may draw a finger from a glove. This suggestion may not only apply to the peeling of an orange, but also to the splitting of a stick. Those who make hoops for barrels, split the hoop in order to make them, but they do not commence with the top or slender portion of the pole and split downwards. They could not do this; but by taking the thicker end and working from the thick to the thin, no trouble is found—the pole splits easily. Also in cutting wood, the expert axman knows that he gets along nicely by starting at the thickest end. Still further, this hint can be usefully applied in planting fence posts. While the sap of a tree ascends easily by following the forked upward channels, it cannot so easily descend. By planting a post, therefore upside down, that is to say in a contrary direction to which the tree grew, moisture will not be drawn upward near as easily as when the post is planted in the other direction. An inverted post, therefore, will last nearly double the time without rotting, that one will do set without regard to this principle.

LANDSCAPE GARDENING.—It is a pleasure to note that not only horticultural magazines are on the increase and successfully prosecuted, but that papers outside the fold are inclined to help along the love of gardening. Thus the New York *Independent* gives it a good word. "Money," it says, "never shows off to better advantage then when expended on parks, lawns, gardens, groves and trees; but better than all is the taste, the skill and gracious art which knows how to make the fraction of an acre a field of beauty. It was the saying of a famous Russian diplomat that the love of landscape was the latest affection developed in the human breast in the order of nature. Whether it is or not it is certainly one of the latest to be developed in the order of civilization, and as it is one of the latest, is also one of the most beautiful and most generous." This is a good line of thought, and worthy of recording here.

AMERICAN CHRYSANTHEMUMS. — The London *Journal of Horticulture*, concedes that American florists are taking the lead in raising new chrysanthemums,—and that to America, Europe must henceforth look for its annual crop of the best novelties.

It may not be out of place to note the good work which has been done by the *American Florist* in this connection. It has stimulated the concerted action of American Florists on this and other matters of trade interest, as nothing else could have done,—and possibly to this excellent trade journal, more than any other cause, is due the remarkable prosperity of the florists of our country, and which can hardly be understood by the florists of the old world.

A PROTECTION AGAINST INSECTS.—The *California Fruit Grower* states that some Californians believe that the common blue gum, planted near orchards or vineyards, is a protection against the attack of caterpillars, and that branches of this tree placed in rooms or windows will cause all kinds of insects to quit the premises. Branches are used to place under carpets to keep the moths away, and it is even said that if they are placed under beds and pillows it is a complete security against entomological specimens of any kind. We have heard this before of many other plants, without finding the results in accord with the reputation. We suspect that in this case much of the reputation may be found fabulous; but it is worth recording as among the beliefs of people who have some experience to recommend them.

HOT-POKER PLANT.—*Tritoma uvaria*, which has long sailed on the sea of popularity under the above name, now appears in some catalogues as the "Torch lily."

QUERCUS MACROCARPA.—Usually American forest trees, growing naturally, are so crowded that it is difficult to get an idea of their form when growing singly, and this has especially been the case, so far as the conductors of this magazine are concerned, with the mossy-cup oak. The writer of this paragraph has never seen one in a wild condition which had the form which nature would doubtless give it when growing singly. The best specimens within his knowledge are in the public squares of Washington. These are very large and noble trees, but, intermixed with others, have not the chance for their full development. We give

Quercus macrocarpa.

with this a sketch of an Illinois specimen, which has been kindly furnished us by Dr. J. T. Stewart, of Peoria. As usually seen in cultivation it has a very straggling habit, due to youth rather than to natural inclination. We see by this illustration what a beautiful character it takes on with age.

FUCHSIA TRIPHYLLA.—This is probably the earliest Fuchsia known, having been discovered by Father Plumier in Peru, in 1680, and it is yet as handsome as many of the hybrid kinds popular in gardens.

BEGGAR WEED.—*The Bulletin* of the United States Department of Agriculture, referring to the Kansas Experimental Stations, states that in that part of the world *Desmodium molle* is generally known as beggar weed. In spite of its name, cattle are very fond of it, and in rich soils it proves one of the most profitable of forage plants.

RETINOSPORA HEDGES.—The various kinds of Japan cedars known as *Retinospora*, are found hardy in most parts, except the very hottest of the United States, and make admirable evergreen hedges.

VALUE OF THE MOLE.—A scientific serial of great influence, has been berating garden loving folks for destroying moles. They turn up and freshen the soil, eat vermin and so on This is all true. The house-fly is a valuable scavenger, but yet we have to use fly-paper to get rid of it. If our scientific friend had the care of a lawn, and found it turned up like a ploughed field,—or had the plants in his flower beds rooted out and destroyed, he would probably forget about the subsoiling, insect devouring habits of the mole, and use very impressive language.

FRINGE TREES.—There has recently been introduced from Asia a species of *Chionanthus*, called *C. retusus*, which gives us the opportunity of not only showing how different it is in habit from the *Chionanthus Virginica*, but also to say a good word in favor of the American species. See illustration below and on p. 157. It may be seen that the *C. retusus*, the illustration of which we have copied from the London *Gardeners' Chronicle*, has the flowers in stiff, erect clusters, in that respect somewhat resembling the Privet; but the American species has the flowers very deeply cut, and pendulous, and very much resemble fringe cut out of paper, fully warranting the common name of the Fringe tree. It will not do to call the

CHIONANTHUS VIRGINICA.

Asiatic relative by the name of fringe, as there is nothing resembling fringe about it, so that there will be a good chance for some one fond of coining common names, to invent something which shall be appropriate to distinguish the Asiatic form from its American brother. The American Fringe tree, *C. Virginica*, is only found in a narrow strip of country along the sea-coast, from New Jersey southwardly. Aside from the singular interest connected with its flowers, it is particularly handsome when in fruit, the berries being borne in long clusters as if they were grapes. It is proper to add, however, that the flowers are dicœcious, and those who buy plants have a chance of getting a form with sterile flowers, from which, of course, no fruit results. Those who get the most satisfactory results from the fruit, plant several in one large clump together. It is said that occasionally plants bear these beautiful clusters of purple fruit when entirely by themselves—a long way from any neighbor,—and this would indicate that occasionally the plant is hermaphrodite. Although this is reported to be sometimes the case, the writer has never seen an instance.

MEDARY.—When giving a brief account of this beautiful spot, in a recent number of MEEHANS' MONTHLY, we had no idea that we should so soon have to record the death of the estimable proprietress, Mrs. Harry Ingersoll, who has since deceased in her eighty-third year. Many friends of horticulture, who have delighted in this—one of the most successful of the many beautiful places designed by the great landscape gardener, Andrew Jackson Downing,—feared it would disappear as so many city places do, on the death of this lady, as it is not very far removed from the city improvements, which are fast approaching to these beautiful grounds. It is a pleasure, however, to learn that the property comes into the possession of a nephew of Mrs. Ingersoll, Mr. C. Morton Smith, who proposes to keep it up, and to endeavor to maintain it as one of the most beautiful garden spots in the vicinity of Philadelphia. One of the unfortunate matters which so often occur in the change of property of this character, will be the leaving of the situation as gardener by Mr. Sykes, to whom reference was made in the notice of the grounds. After twenty years of service, he has been kindly remembered by Mrs. Ingersoll in her will, and it is to be hoped that he may yet find some situation where his excellent talents may get an opportunity to be still useful to the gardening art.

LARGE EVERGREENS OF JAPAN.—The trees in our gardens known under the following names grow to the heights given. *Cryptomeria Japonica*, 120, occasionally 200 feet. *Retinospora obtusa*, 150 feet, and the Umbrella Pine, 120 feet, The Retinospora is now common in our large nurseries and is one of the hardiest and best of our ornamental evergreens. The writer saw a hedge of it on Mr. Hunnewell's place at Wellesley, near Boston, some years ago, which was very beautiful.

VIGOROUS GROWTH IN OAKS.—An opinion prevails that oaks are slow growers. The illustration given on this page is of a Pin Oak, *Quercus palustris*, ten years old. It is twenty feet high, making an average of two feet a year. On account of this impression of slow growth, oaks have never been to any extent used as shade or street trees; but what kind of a tree would make a prettier show or give more satisfaction than a row of oaks like the illustration?

The lower branches of a Pin Oak, where they have not been trimmed, have a tendency to droop, often touching the ground. When pruned up for shade trees, the upper branches spread out like an umbrella.

Vigorous growth and pretty shape are not confined to the Pin Oak; as the red, black, scarlet, and mossy cup also take good shapes, and grow rapidly in cultivation. For shade trees they ought to come into general use, as they transplant as well as most trees, and the trunks are always straight. No one who plants a row of the kinds named above, will ever have cause for regret, or complain that his neighbor's rows of maples, lindens or other trees give more satisfaction than his.

QUERCUS PALUSTRIS.

BIRD OF PARADISE FLOWER.—A correspondent, who recently visited California, is very much struck with the beauty of a shrub, or small tree, that goes there under the name of Bird of Paradise flower. He is anxious to know what is its botanical name? It is Poinciana Gillesii.

FRUITS AND VEGETABLES.

HYBRID PLUMS.—Mr. Luther Burbank sends specimens of hybrid plums, which are certainly remarkable in this that they came in a small box by mail during the torrid weather of the early part of August, wrapped simply in cotton batting and were as sound and fresh as if just taken from the tree. Certainly they are, in the language of the markets, admirable carriers. They are crossbred Japan Plums. The female parent is the Kelsey Japan Plum, the pollen used being from the Satsuma and Burbank. Though the first year of bearing, and therefore smaller than they will be next year, according to usual experience, —they are six inches in circumference, one of them looks just like a very large Reine Claude de Bavay—the finest of all the green gages, —the other is a dark purple, and of a piquant agreeable flavor peculiarly its own. Another, the Perfection, is superior to most of the plums of the old world stock, both in size and flavor.

New varieties in this line, ought to be of great value to the fruit growers of the Pacific coast.

PEAR, STAR OF BETHLEHEM.—Mr. Peter Titlar, of Sing Sing, N. Y., is very anxious to know whether a pear, described in the *Horticulturist* for November, 1869, as the "Star of Bethlehem, and which received considerable praise, together with a description and illustration, is still in existence, and who could furnish scions of that kind for propagation?

SUMMER PRUNING GRAPE-VINES.—In some parts of the world cultivators of grape-vines pick off a large number of leaves of the vine, in order, they say, to let the sunlight in, to improve the grapes. A very learned paper has recently been issued, going over careful experiments, with the result of showing that this is an error. Grapes ripen better with an abundance of heavy foliage around them than otherwise. This is certainly the universal experience in America. No one now thinks of trimming off the leaves of grapes in order to assist the ripening of the fruit. The blackest and darkest grapes are frequently under the deepest shade of leaves. Ripening is, in fact, a vital process, in which an abundance of healthy leaves is an essential requisite. Chemistry, of course, plays a small part, but the life, and not mere sunlight, is the main agent in the case.

INDIAN VEGETABLES.—A South Carolina correspondent says, "during our early married life my parents resided for a while in Tennessee, near some Cherokee Indian families, who were partially civilized, and pursued agriculture just as they had done perhaps ages before the white man came among them. My mother obtained from a chief named Silver Jack, a snap-short bean, and the name was given to the bean. It has since been carefully cultivated, and handed down, and that particular variety of the bean family is still popular. There is no doubt about this being a genuine Indian production, and not derived from any of the usual sources from which we obtain old world varieties."

RUBUS PHŒNICOLASIUS.—This, to which the taking name of "Wine-berry" has been recently attached, was described in the *Gardeners' Monthly* for 1880, and has been in our collection for several years, without attracting special attention. It is extremely doubtful whether much wine will ever be made from these berries, to say the least.

WEIGHT OF PLUMS.—At a recent meeting of the California State Horticultural Society, it was stated that about forty prunes to the pound was considered first-class weight.

POISONOUS MUSHROOMS.—A correspondent well remarks that comparatively few of the many species of mushroom are poisonous, and that there are certain rules, easily learned, by which the good may be readily distinguished from the bad ones. MEEHANS' MONTHLY had thought to give these rules, but remembering how hard it is to get some to understand, it was feared that more harm than good might result in many instances. The best way is to learn of each kind individually, and get acquainted with its merits and demerits. There was a beautiful work issued by Prang, a few years ago, which illustrated the bad and good kinds, so that no one could make a mistake. It may be said that the common Puff balls, taken young, and fried in slices like egg plants, make delicious eating.

TOMATOES IN THE OLD WORLD.—Mons. de Varigney, Paris, France, says,—"on page 124 you say that tomatoes are spreading in the "old world." They are eaten by all classes in Spain, where they are very popular, as well as in the South of France and Italy, for over a century. But English people are often slow in acquiring new tastes." MEEHANS' MONTHLY thanks him very much for the correction. Certainly "England" and not the "old world" should have been the term used.

EARLY PEACHES.—Mr. Alex. Murdoch of Pittsburg, suggests that $40. per ton (less than 2 cents per lb.) does not seem an adequate price for early peaches two and a half inches in diameter. He no doubt thinks the price must be raised if a premium is to be offered for their production. Mr. M. also notes a typographical error at page 104 "grafting separated stems," where *two* is read instead of *tree*, as intended. The orange tree misprint has been corrected by another correspondent.

CHRYSANTHEMUM FLOWERS.—Prof. Georgeson, in *American Gardening*, says the flowers are common in provision stores in Japan. They are boiled as greens with vinegar and sugar, or packed in salt for winter, like sauerkraut. The flowers are also finely cut, beaten in a mortar to a pulp, then used as a salad.

Pruning Trees.—There are two schools of opposite extremes in regard to pruning; one is not to neglect to cut and slash on every occasion; to use their own motto, "whenever the pruning knife is sharp,"—and the other would cut not at all, but leave everything to nature. In the management of an apple orchard pruning is essential; all the weak shoots, those which seem to suffer from overbearing, or from any other cause, which are not as healthy as others, should be carefully cut out every year,—and moreover wherever the branches are likely to be thick and struggle with each other for light, they should also be thinned. A perfectly healthy apple tree should be so managed with the pruning knife, that every branch should have a fair chance to have its leaves fairly well exposed to the light. A large quantity of half shaded and half starved leaves on a tree is not nearly so beneficial as when the tree has a chance for the full development of every leaf,—and what is true of the apple orchard is true in the main of all other trees in the hands of the cultivator. When we come to forestry culture it is impossible to do without pruning, if we would have first-class timber,—but that is another question. Our point was to refer chiefly to the management of fruit trees.

Fruit Loving Birds.—A continual warfare of correspondence is being kept up in the newspapers, first against robins, sparrows, and other fruit-loving birds,—and then, again, on the side in favor of them. Truly these birds use a great deal of fruit, frequently taking the whole crop, and undoubtedly they are useful in their way, in keeping down insects. It is impossible for any one to say decisively whether these birds are a plague or profit; of course, it depends on the view which each writer takes. If one is disposed, like Tennyson, to let the birds have all the cherries, satisfied with their music and pleasant company as a compensation, that is one way to look at it,—but when the grower wants some of the cherries as well as the birds, it is quite natural that he should be indignant when these selfish creatures take more than their share. We doubt very much whether the question will ever be decided. There is very little use in the long essays we see on each side of the question.

Russian Apples.—It was supposed that a variety of apple hardy in Russia would certainly be hardy anywhere in the United States. Strenous efforts were made therefore several years ago to introduce Russian varieties, in the belief that they would be hardier in the Northwest than our ordinary kinds, which have not been found to do well there. The writer of this paragraph decided at that time that hardiness was not a simple question of temperature, for the trees of Alaska are not hardy in Philadelphia,—and that Russian varieties of apples in our country are no hardier than others.

CHIONANTHUS RETUSUS.
SEE P. 154

At the last meeting of the Nurserymen's Association, Mr. Albaugh said, that of thirty-seven varieties of Russian apples that he had tried in Illinois, the last few years, only one, called the Longfield, escaped.

Imported Insects.—*The Cal. Fruit Culturist* notes, that it is no worse to introduce an insect injurious to fruit trees from one state to another state than it is to carry them from one part of a state to another part of the same state, and it notices that insects injurious to oranges are transported from one Californian nursery to another part of the state without let or hindrance. It intimates that a quarantine is as necessary around every large city where there is a nursery, as well as around every state.

BIOGRAPHY AND LITERATURE.

FORGET-ME-NOT.

Give, O earth, a hero's grave!
Flush it with thy fairest bloom,—
Bluest of Forget-me-nots
For a stainless soldier's tomb!

He was fellow with them all,
Wearers of the blue and gray,
Men who, told that they must die,
Only asked to know the way.

—J. W. CHADWICK.

GARDENING.—This is the title of a new gardening magazine, which is to be issued from Chicago on the 15th of September. It is to appear twice a month at the moderate price of $1.00 a year. Mr. William Falconer, whose name is synonymous with intelligent gardening, is to be the editor, and the work is to be devoted to telling amateurs in gardening what they want to know in plain language which they can understand. There is abundant room for periodicals devoted wholly to the enlightenment of those who love gardens. For those who desire simply to follow the profession as a mere money making affair, there is no lack of papers. The result has been that the trade has developed much faster than its customers. Every effort to aid in instructing amateurs is welcome, and we are sure the magazine now announced will be of great value in extending the love of horticulture.

The circular intimates that though the proprietors are interested in the sale of the work, as all publishers are, "its teachings and opinions shall be reliable, perfectly independent and unbiased." Though it is generally supposed that newspapers and magazines never "quarrel with their bread and butter," and have a tender spot for articles advertised in their columns, no one who knows Mr. Falconer would for a moment suppose these considerations would bias him, and the intimation is superfluous.

WILLIAM SESSEN.—Geneva, New York, is one of the great centers of horticultural interest,—and much of its good name is due to William Sessen, who died on the 4th of July, aged seventy-two. He was a native of England, an excellent practical farmer, with a knowledge of grafting, and entered into the employ of Messrs. W. T. & E. Smith, when they started their great business. About twenty years ago, was started the nurseries of Cobleigh & Sessen, which will still be continued by Victor Panecock, under the firm name of Wm. Sessen & Co. He became comparatively well off by his business ventures.

DR. THOMAS F. WOOD.—The death of Dr. Thomas F. Wood, of Wilmington, North Carolina, is announced as having taken place in that city on Aug. 22nd. His chief eminence was in his profession, being the author of many superior papers on medical topics. But he was scarcely less known as a superior botanist. Those interested in the study of Venus' Fly Trap, *Dionæa muscipula*, were indebted to him for many curious facts.

L. H. BAILEY.—*Annals of Horticulture for 1891*—Issued by the Rural Publishing Co., New York. This is the third year of Prof. Bailey's useful annals. Its scope is to show the absolute progress made by horticulture during the year in every department. As a reference book it is indispensable to a well ordered garden library,—and it will be difficult for those progressively inclined to do well without it. The same company has just issued a second edition of Mr. Bailey's "Horticultural Rule Book," which shows a gratifying public appreciation. It is replete with information of much value to every lover of gardening.

OAKWOOD CEMETERY, TROY, N. Y.—The Troy *Times* has recently had a supplement, giving an account, with illustrations, of the Oakwood Cemetery in that town, from which it is evident, aside from the reputation which these grounds have earned, that it is one of the most beautiful specimens of a garden cemetery

in the United States. The *Times* states that it is certainly the most beautiful specimen of landscape gardening of any kind in the vicinity of Troy, and that it is regarded as one of the essential features of interest for visitors to that section. It appears that the work was started over a quarter of a century ago, and the chief credit for the beautiful effect is given to Mr. John Boetcher, who for 21 years has been the landscape gardener and superintendent in charge. Great credit is given to Mr. Adam R. Smith, a banker of the city, who has been for many years president of the Cemetery Association, for the cordial and intelligent backing he has given to the superintendent. It almost always happens that the success of undertakings of this kind depends on the good fortune of getting an able landscape gardener, and this Company was evidently extremely fortunate in this instance. Mr. Boetcher was born in the north of Germany, on the 11th of March, 1841, and seemed naturally to have taken to the study of landscape gardening as an art and as a science. It is not so many years ago since there was absolutely no sentiment about the burial of the dead—the only thought was to have them near to some church where the relatives were in the habit of assembling, and the old church-yard, with its many attendant horrors, can scarcely be conceived of by the present generation. Cemeteries grew out of the disgust with the want of true regard for the actual memory of the dead; but even these have had to be developed. The earlier cemeteries were little more than protests against the enormities of the past. Although we imagine Paradise as a garden, with perpetually blooming flowers, and everything about it blooming, it is only recently that the thought has come that we might make earthly paradises of our burial places. There are now several scores in our country which may lay claim to the highest style of garden beauty, and it is to point out continually just where these are, as good examples to those who are endeavoring to strive, not only after the better life, but after more natural treatment of the memories of the dead, that we write this paragraph.

JOHN BOETCHER.

GENERAL NOTES.

Changing Plants' Names. — Prof. Alph. Decandolle, of Geneva, who is looked up to as among the highest authorities living, has written a letter which has appeared in the Bulletin of the Botanical Society of France, endorsing the views of the committee of botanists, an abstract of which appeared in last Meehans' Monthly. Decandolle points out that the "laws of nomenclature" to which the radical element appeal in support of their effort to change so many plants' names, really aid the conservative element.

We adopt Linnæus as the line beyond which priority should not rule,—not because he was the author of the bi-nomial system, which he was not, but because he made the binomial system come under a constant and general rule. The later and not the earlier works of Linnæus in which genera and species were completely covered, should therefore be our guide.

Even where plants have been accepted under names which the rigid rules of priority could condemn, he appeals to "the laws of nomenclature, article 4, and commentaries, page 33," in justification of their retention.

It would indeed be strange if some provision should not be made in laws of this character, by which the whole world of science should be prevented from suffering because "somebody blundered." If a wrongly given name can be corrected before it gets into general use,—all right,—but to upset the herbariums and the literature of the whole world in correction of such an error is a task Ajax might envy.

Conservatories, Greenhouses and Vineries.—The publishers made some change in the management of the advertisement department last month, and one of the mishaps which sometimes follow rearrangement, was the leaving out under a misapprehension of Lord, & Burnham & Co., the advertisement of greenhouse construction which appears in its proper place this month.

Progress of the Magazine.—An eminent scientist kindly says, "I have just read the August number of Meehans' Monthly, and feel that you will soon have to double the price in order to give us more of the reading matter. There is entirely too little of such a good thing." We are afraid the readers are being spoiled. By our condensed system we give in sixteen pages what could easily be spread over thirty-two, and the reader be none the wiser! In the August issue seventy-eight distinct topics were succinctly treated, and little more could be said than was said about them. There will be no need to raise the price, if readers will kindly see that we get subscribers. The main cost is in the colored plate, which is finished in the highest style of art. After a certain number of subscribers is reached, we shall be satisfied with the price. The subscriptions for next year will soon be in order, and if only each would send another with his own, it would help amazingly.

Science at Peoria.—The Scientific Association of Peoria, Illinois, of which our correspondent, Dr. Stewart, is President, is endeavoring to resolve itself into an Academy of Sciences.

Caladium esculentum. — This is well known in the South under the vernacular name of Tanyah. The roots are almost as common in the markets of the South as potatoes are with us, and on account of its peculiar glaucous leaves is known in South Carolina as "quicksilver plant."

Our Next Plate.—The colored plate for November will represent *Hibiscus Moscheutos*, or Swamp Rose Mallow. A single plant can hardly be called pretty, but when seen in masses in its natural location along the sea coast and marshes, it has a most beautiful effect on floral scenery. It is sometimes found near inland springs of salt water.

HIBISCUS MOSCHEUTOS.

SWAMP ROSE-MALLOW.

NATURAL ORDER, MALVACEÆ.

HIBISCUS MOSCHEUTOS, Linnæus.—Leaves ovate, pointed, toothed, the lower three-lobed, whitened underneath with a fine soft down, glabrous or slightly downy beneath; the one-flowered peduncles sometimes united at the base with the petioles, calyx not inflated; pod and seeds smooth or nearly so. (Gray's *Manual of the Botany of the Northern United States*. See also Chapman's *Flora of the Southern United States*, and Wood's *Class-Book of Botany*.)

The Swamp Rose-Mallow can scarcely be called a beautiful wild flower, for it is coarse in all its features; but there are few plants which aid more in giving beauty to the natural scenery than this does in the locations where it is generally found. The marshy lands near the coast in the eastern seaboard States seem to be its especial favorites, and the lower lands of New Jersey from New York to Cape May are made particularly gay by its flowers during the months of July and August. Here among the multitudes of sedgy and grass-like species the heavier foliage of Rose-Mallow adds rather than detracts from the general effect, and the wide gay flowers are not out of proportion in the magnificence of the scene. In this wild condition it adds to its general interest by offering a great variety of colors. Sometimes the flowers are of a deep rose color, when they have a lighter centre; at other times they may be found quite white. The intermediate form, such as the one we have selected for illustration, is perhaps the prettiest. This is deep rose in the centre, fading away to pale white on the margins. The petals of this form are also rounder than in the deep rose colored form. The general height is about two feet, though some may be found taller or shorter than this. Where the root stock remains undisturbed for a number of years, numerous stalks will be thrown up from the base, and when these are all in flower they form a bush of very gay effect. Many perennial plants do not thrive well for more than three or four years; but this has been known to remain ten or a dozen years, and to be as strong and vigorous as a much younger plant.

The name Swamp Rose-Mallow has been adopted here, as the one most likely to prevail, though in some places it is known as Swamp Marsh Mallow, and Barton, in his *Flora of Philadelphia*, calls it Syrian Mallow. This last mentioned name came probably from its specific name Moscheutos, which was given, or rather adopted by Linnæus. The student may remember that a century ago plants had but a generic name, and not a generic and specific name as now. Linnæus made popular this binominal and very convenient system. But in selecting the names he usually employed for the specific designation a prominent adjective already in use in the description of the plant, Now of our plant Green says in his *Herbal*, "native of Virginia and Canada, though Cornutus informs us that it originally came from the woods of Africa;" and this statement in some form or another has been made of Cornutus by other authors. This, however, hardly does justice to Cornutus. He was the first to write about American plants, publishing in 1635 in Paris an account of some plants probably sent to him from Canada. In this work he says that he only knew of the plant as a garden specimen, and he supposes it must be an African plant, introduced, because he finds the description of the Moscheuton of the old Roman writer to agree with it. Pliny has a chapter on Roses; and he tells us that the Moscheuton is a plant with a flower like a rose and growth like a mallow. This is the origin of "rose mallow," and of Moscheutus, and probably of the common name of Barton.

This plant seems to have been one of the earliest of American wild flowers to find a home in Europe. The exact date seems to be unknown, as Aiton, particular in dates with most English introductions, leaves a blank for this. It is, however, described as growing in English gardens by Salmon, who wrote in 1710, and dedicated his huge work to Queen Anne. His description is so quaint, and yet so accurate for the times in which he lived, as to be worth reproducing here. "The Rose Marsh-Mallow of America, has a Root which is thick, white, and fleshy, which abides safe in the Earth all Winter, tho' the Stalks die away and perish

every year. This plant shoots forth about May, several round greenish, soft, branched Stalks like to the Marsh-Mallow, beset with several soft green leaves which are gray underneath. At the tops of the Stalks and Branches stand several white Flowers, made of five large Leaves a piece, somewhat like a Hollihock, with a tuft of white threads, compassing a middle Umbone or Pointell, issuing out of a great Button or Husk, which is as it were Ribbed, and broad at the bottom, narrowing to the top, before the flower blows, and without any smell." As *Hibiscus palustris* its more modern wanderings have been better traced; but Pursh gave good reasons for believing the two were the same, and his views are fully confirmed by the writer's own observations. The differences were mainly in the union of the petiole or leaf stalk with the peduncle or flower stalk. In some cases the two are so united that the flower stalk seems to grow out of the petiole, and it has actually been described as doing so by some authors. But it is really the union of parts normally free. In a great many instances the differences between species, and indeed of genera and even natural orders depend on the cohesion of parts in some cases, or the separation of parts united in others, and there is, therefore, no department of Botany more interesting than that which relates to these variations of cohesion in normal forms; and this illustration in the Rose Marsh-Mallow will be well worthy of the student's examination. The cohesion and freedom of petiole and peduncle are often found on the same plant; and this is why the two—Hibiscus Moscheutos and Hibiscus palustris—are now known to be the same. Another interesting lesson may be drawn from our plant. It is well known that plants which are annual in some countries may be perennial or even woody shrubs in another. Our Swamp Rose-Mallow dies to the ground, but if any part of the flower stems be covered with earth, they will endure the winter, and buds will push forth, and the stem become a permanent woody trunk. It would seem that the evaporation of its juices renders the stem annual. The moisture in the branches beneath the ground is guarded against this rapid evaporation. Still another interesting lesson is furnished by the endurance of the seeds. On several occasions the plants in garden culture have been destroyed by an unusually severe winter; but it is always reproduced by self-sown seeds, thus illustrating what has been known to be a fact in some other instances, that a seed is capable of enduring a greater amount of cold than the plant which produces it.

The Rose Marsh-Mallow has had some connection with the arts. The Report of the United States Department of Agriculture for 1865 says, "Hibiscus Moscheutos, a malvaceous perennial (together with Abutilon Avicennæ), has been recently announced as yielding a fibrous bark suitable for textile purposes, similar to the "jute" of commerce obtained from Asiatic species of corchorus, and employed in the manufacture of gunny bags. The economical value of this material, which is called 'American Jute,' must be ascertained by experience." Up to this date—1881—however, it has not been brought into any general use. It has also had some—though little—repute as a medicinal plant. Dr. F. Peyre Porcher says, all the Marsh-Mallows yield mucilage, and that Hibiscus Moscheutos "also is possessed of demulcent properties." The okra of our gardens is *Hibiscus esculentus*, introduced from Africa, and yields so much mucilage as to make it a very pleasant ingredient in soup.

Besides the synonyms noted it has had others; but few of them that need a reference to here. Tournefort, who wrote in 1700, describes it as *Ketmia palustris*.

It is remarkable that, although the plant seems to thrive well in any good garden soil, it is rarely found at great distances from the sea, or salt water. In inland places it is sometimes found near salt springs, and Pursh, in his diary, records finding it, in that early period of botanical history, at Onondaga, New York, which is now celebrated for its salt. Professor A. H. Young records it as having been found so far west as Jefferson Co., Indiana; but whether near salt springs is not recorded. However, large numbers of plants belonging to salt water regions, are found on parts of the prairies, and give rise to the speculation that salt water at one time existed there, and that these plants are the survivors of a larger salt water flora.

EXPLANATION OF THE PLATE.—1. Branch from a specimen furnished by Mr. W. F. Bassett, from Hammonton, N. J.

WILD FLOWERS AND NATURE.

LONELINESS.

Few sounds were there:—the dropping of a nut,
The squirrel's chirrup, and the jay's harsh scream,
Autumn's sad remnants of blithe summer's cheer,
Heard at long intervals, seemed but to make
The dreadful voice of silence silenter.

LOWELL.

REDWOOD TREES FROM CUTTINGS. — Prof. Emory Smith of the Leland Stanford University, in a call at our office, left a photograph, which we have had engraved to illustrate this paragraph, see page 169. It shows a remarkable character in the red wood (*Sequoia sempervirens*) not known before to exist in that or any other known coniferous tree. A willow and some other trees when felled will often throw up sprouts, which will become trees, forming roots from the underside of the trunk, and it appears so with the redwood.

In the illustration one of the branches is sprouting out at the base of the log, so as to produce a tree which will be entirely independent when the log rots away. In the other log two trees have sprung from the upper surface of the log, just below the wedge-shaped cut, while their trunks are proceeding from the old prostrate tree. Mr. Smith states that even chips which have been scattered by the wood-man's axe, when they fall in moist places, will sprout and grow.

THE ARCTIC POPPY.—Through the efforts of our seedsmen the Arctic Poppy, *Papaver nudicaule*, is getting pretty well known. The botanist of the Peary Arctic Expedition reports that, in the northern part of Greenland this poppy forms one of the most beautiful features in the floral scenery. The golden flowers are about the size of our silver dollars; they grow in immense sheets, giving a golden character to the country that would scarcely be equalled by a large field of buttercups or dandelions. An interesting point, with which we were not before acquainted, was that albinos, or pure white blossoms, are not unfrequent among the yellow ones.

THE DESERT FLORA. — On the ancient school maps were tracts noted under the style of the Great American Desert. Desert as it was, it was a paradise of wild flowers; the western portions of Kansas and Nebraska especially so. The writer of this paragraph has roamed over this desert, plant hunting, when the Buffalo roamed also, and some of the most beautiful flowers in his garden were from this so-called desert land—desert simply because little rain fell. The laws which regulated rainfall here seemed simple enough to him, and indicated that there were cycles of rain-fall and of drouth which would alternate continually for many ages to come. The character of this desert flora showed certainly that there must be continual cycles, for plants grew there which could have become established only under successive rainy seasons. The country has been more or less settled of late; during one of these rainy cycles, the settlers having been taught that tree-planting had changed permanently the dry climate. The dry cycle has now returned, and there is talk of giving up the farms to wild flowers again. A wiser plan would be to adapt cultivation to such vicissitudes. There are crops better adapted to such trials than others, and this is the true line of development.

CYPRESS KNEES. — A lady writing from Charleston, states, "that in the rural districts the hollow Cypress Knees are not only employed as bee hives but for a number of other purposes, some of which are, as tar buckets to swing under ox carts, to carry material for lubricating wheels. They are also used to contain fishermen's bait, which consists usually of minnows. The knees are stuck in the mud in an upright position, by pressing down, and are then filled with water, in which the minnows are preserved. The knees are also often used to ornament gate posts,—the hollow knees being nailed to the face of the post near the top, and then planted with trailing vines, just as flowers are in baskets."

VEGETATION IN THE VICINITY OF GLACIERS.—When the writer of this paragraph visited the celebrated Muir Glacier in Alaska, in 1883, it was evident that the whole of the glacier system of that part of Alaska was in rapid retreat. He had reason to believe that less than one-half a century ago the whole of the land from the peninsula between Glacier Bay and Pyramid Harbor was completely covered with ice, and within that time it had so far advanced that young forests of spruces and pines, not more than fifteen years old at the most, were covering what had been ice within the present century. The interesting part was his collection of plants in that portion known as Bartlett Bay. The greater portion of these plants was of such a character that they could not have been brought down by the ice sheet, but must have been covered by the ice and remained in a state of dormancy during the whole time that the ice had covered the land — they were springing up in the greatest abundance right on the line of the retreating ice. Prof. Frederick Wright, of Oberlin College, has recently given an account of a visit to this glacier in 1890, in which he seems to confirm the position which the writer had to assume, that the flow of these glaciers from long extents of territory was frequently very rapid, and that their decline is no less rapid than their formation. It does not seem to require the many centuries to form and retreat which scientific men usually attribute to them. The Muir Glacier is evidently retreating with great rapidity. By comparing photographs taken in 1886 by Prof. Reed, with others taken in 1890, he is able to show that some portion of this immense glacier has retreated between 750 and 1,200 yards during that interval.

VARIATION.—In old time variation was supposed to be a special property of the seed to get new varieties; now it is found that buds will vary as well as seeds, and many of the popular flowers in use by florists have been raised from branches which have "sported," to use a technical term, from other kinds. It is further found that even bulblets will vary in the same way. Many ferns produce these on the fronds, and Mr. G. J. Lowe has recently recorded the fact that he has raised new varieties of ferns directly from these bulblets.

THE PLEASURES OF BOTANY.—No one questions the pleasures of travel. As our years roll on towards the sere and yellow leaf in the autumn of life, few things are sweeter than the recollections of early travels. But without an object travel is shorn of half of its enjoyment, and the recollections are of the shadowish character; and few objects make a more enduring impression, and fix beautiful scenery more forcible on the mind, than the collection and study of plants by the way. One of the happiest men known to writer, Mr. Alexander Caie of Philadelphia, who was a student in Edinburg nearly sixty years ago, loves to drop into our office and tell of the happy days when "with Sir William Hooker and Murray, and some 250 students, we would take a trip over Ben Lomond, in the North of Scotland. Hooker was light of foot, and would even outrun many of us younger lads, and he was the first to shout out some rare plants' locality. And then the grand scenery with the Alchimellas and Potentillas growing and blooming out of the crevices of the rocks,—with little drops of water from the rocks dropping on *Azalea procumbens* and other Alpine things,—I tell you it was grand,—and I wish I was young and could go over the whole thing now!"

We do not hear mere people of the world talk this way. To many the past is a blank. Instead of caring to live their lives over again they would as soon get out of the world altogether, — the only attachment being with friends and relatives. It is not till age reaches us that we fully perceive the advantages we enjoyed in a love of nature, and a fondness for botany or other branches of natural history. The young can scarcely appreciate it. The best service we can render is to foster this love in them. They will thank us hereafter more for it than for a fortune in cash.

THE KILLARNEY FERN.—The Rev. James Morrow, referring to the beautiful plate of the Killarney Fern, given in a recent number of MEEHANS' MONTHLY, calls attention to an interesting variety of the *Polystichum aculeatum*, sometimes called *P. proliferum*, which variety is named *Crawfordianum*,—having been discovered at Crawford's Burn, near Belfast in Ireland. It is described as a variety of great beauty.

FRAZER'S BALSAM FIR. — This beautiful American Fir, is rarely seen in American gardens. When the large European nurseries are drawn on, forms of the common Balsam Fir are sent here for it. The first chance the writer had of learning its true identity, was when some years ago he made a summer botanical trip through the beautiful mountains of North Carolina. It was at least as handsome as the celebrated Nordmann Fir of the Crimea. It gave one of the leading charms to the mountain scenery, which at that time was inaccessible to all but the hardiest class of nature-loving travelers. Now, mainly through the improvement company of the town of Linville, lines of easy travel are being opened up, and these grand mountain regions are becoming not only accessible, but popular places of summer resort, and the grand Frazer Fir, will soon become as well known as it deserves to be. We give with this an illustration showing the appearance this tree presents when the chief element in the forest scenery. It has been said that when a forest is cut away, or is in any way removed, the succession is different from the original. The writer noted in his journey above referred to, that this was not the case with Frazer's Balsam. Young trees were abundant under the older in the original forest.

FRAZER'S BALSAM FIR.

LARGE DOUGLASS SPRUCE. — Mr. Cyru Walker, of Puget Sound, tells the *Rural Press* that some of the largest Douglass F r of that region are about seven feet in diameter at the stump, and run to 300 feet high, but that this size is very rarely seen. He has seen but one log that was 300 feet long.

PINUS ARISTATA.—A Denver correspondent calls attention to the great beauty of the Awn-coned Pine, *Pinus aristata*. It is only found near the timber line in the Rocky Mountains, and under cultivation will require cool situations. Has any reader a good cultivated specimen?

TROPICAL SCENES. — A correspondent who spent a few weeks the past winter in Bermuda, says:—"I expected to see some 'tropics' there, but was deceived. *Nearly* everything on the island seems evergreen and tropical and grows all the year round. But it grows very slowly and, owing to the nature of the few inches of soil on a coral reef, nothing seems to succeed well. Nothing is rank or luxuriant; there seems to be but two natives: a red cedar tree and the 'live plant' weed.

Of vegetables nothing so far has succeeded but onions and potatoes. The lilies are 'played out' they say, won't pay any more—superabundance. Originally grown by Gen. Hastings, United States Army, who lives there all the year round for his health. Grass and pasture of the poorest—only crab grass. Everything eatable imported, fish fine and very abundant though."

It is worthy of note that the general impression of the great beauty of the tropical flora, is an illusion. The color of flowers, like the color on a lady's cheek on a cold day, is due not to insects as freely stated of late, but to a struggle with the elements. Where everything is favorable to a luxuriant growth of foliage, bright colors are scarce. The most brilliant colored flowers are on dry deserts and mountain tops,—and the moft insignificant ..owers are borne by the greatest part of tropical plants. The most beautiful are epiphytes, saprohytes, or such as have a struggle to live.

RUDBECHIA HIRTA.—Last year for the first time was noticed in the vicinity of Philadelphia, flowers of this plant with orange spots at the base of the ray petals in the line of the similar arrangement of color that prevails in *Coreopsis tinctoria*, gaillardias, and other plants. Indeed it is this similarity that gives the variation its chief interest, as it indicates a general law under which this particular class of coloration is being operated. A number

of correspondents communicated similar experiences. Recently came to hand a number of flowers from Miss Florence Beckwith of Rochester, New York, in which this peculiar and pretty style of marking is still more pronounced. In some there are but small brown spots at the base — in others half the ray petal is brown as in *Gaillardia*. In one case the brown takes the form of a stripe from apex to base. One flower of the normal orange yellow color, has two circles of ray florets, giving the appearance of semi-double flowers. If these peculiar departures have been noted before last year, it is remarkable that no one has placed the matter on record. The variations are so striking that some one would surely have seen them had they appeared before. If it could be proved that the plant has only recently taken to doing this, it would be one of the most important botanical discoveries of our times.

THE NATIONAL FLOWER.—At page 126, the August number, it was noted that intelligent people half a century ago were as anxious then as now that there should be some national flower, and that the *Kalmia latifolia* was generally named in that connection. If the discussion is still to continue, we do not know why the Kalmia should be overthrown ; at any rate, the paragraph referred to has brought us a number of letters, some contending that the Golden Rod should now be the choice. There are scores of species of Golden Rod, and no one to tell us which of these species they propose to take. It does seem to MEEHANS' MONTHLY, however, as entirely lost time to talk about making any flower a national one. The Rose has been chosen as the national flower of England simply because it was an emblem in the struggle between the houses of York and Lancaster centuries ago ; and when some flower comes to be associated with some great national event, as that was, we may have a national flower, but not before.

VERONICA OFFICINALIS. — This pretty speedwell has never received any common name, though in its foliage and habit of growth it attracts much attention as a wild flower. It was formerly considered rare in the Atlantic Coast States, though during the past fifty years it has become much more common. It goes often to make up the "sod," where other herbage is not too rank to crowd it out, and it loves partially shaded places. Botanists regarded it as truly indigenous to America as well as to Europe,—which is probably a mistake,—as it seems so much at home in our country when once it gets a foothold, that it would be more widely distributed over our country if time had been given to it. It is said of it in the old world that the leaves, which are astringent and bitter are made into tea in Sweden and some parts of Germany, and used medicinally as a stimulant under the name of Thé d'Europe. Simon Paulli contended that this tea was identical with the true tea of China. A sample is contained in the Kew Museum.

AN INTERESTING BEECH.—Mr. Ernest Walker, New Albany, Ind., writes: "In Grayson Co., Ky., a beech grows at the foot of a projecting cliff. About twenty feet from the ground the trunk presses against the edge of the rocky earth-covered ledge. At this point the trunk has formed roots, which penetrating the soil on the cliff give the tree a double hold upon the soil, and turn a seeming evil into an advantage.

Such behavior seems more interesting in a beech than it would in other trees. Other trees are often eccentric ; the beech but rarely. Its character is dignity, grace and reserve. Anything unusual in a beech therefore is almost as unexpected as a smile on the face of a mourner."

THE JUDAS TREE. — Mr. Edward Tatnall tells us that two miles north of Newark, Del., are some specimens of the *Cercis canadensis*, which are probably thirty feet high and three feet in circumference. These are certainly very fine trees. Do any of our correspondents know of larger ones?

LILIUM WASHINGTONIANUM *Fruits and Flowers*.—An admirable horticultural magazine of the Pacific coast, says that this beautiful lily is almost being exterminated by collectors for the large bulb firms. It does not occur anywhere east of the Cascade Mountains and in Southern Oregon.

GENERAL GARDENING.

HAIL CHRYSANTHEMUM !

Welcome in our leafless bower,
Where November's breath has come,—
Welcome golden-anthered flower,
Ever fair Chrysanthemum !
Like an old friend's pleasant face—
Though the earth is void of grace,
And the many birds are dumb,
Cheerful, gay Chrysanthemum !

Thus may I have round me when
Age's frost my heart shall numb,
Friends as warm and constant then
As thou art, Chrysanthemum !
May I find, though youth be past,
Hearts that loved me to the last,
Eyes that smile, though winter come
Bright as thou, Chrysanthemum !

GENTIANS.—Miss E. B. Boussier sends for name, from Brigantine Beech, N J., *Sabbatia angularis*, with the remark that seeds of this plant seem to fail to grow. This is a general remark regarding the whole of the Gentian family. The impression is, that it takes a peculiar combination of conditions for the seed to germinate, and outside of these conditions, the seeds will remain for many years in the soil before growing. One of the earliest contributions of the writer of this to scientific literature was a paper on the occasional appearance of *Chlora perfoliata*, a plant of the Gentian family. This plant certainly only appeared at intervals of several years. There would be no plants for some years, when they would come up and bloom vigorously again to disappear for several years afterwards. The subject has not been examined as carefully by biologists as it deserves to be.

RAPID GROWTH OF TREES.—A correspondent of the Florida *Dispatch*, states that at the age of fifty-six he planted the nuts of a few pecan, and that in his sixty-ninth year he sold $700 of nuts from the trees which he had planted. He states that trees will commence to bear from eight to nine years after planting, and that paying crops will result in from ten to fifteen years.

ADDITIONAL NOTES ON THE DECIDUOUS CYPRESS.—Rev. Lyman Phelps, Sanford, Fla., writes :—

"I was very glad to see your notice in regard to the cypress—Chapman only gives one variety—there are two here.

There are periods of years since I have been here, when the water would lie four feet above these trees, and for the past three seasons gardens have been planted where I have seen nine feet of water. Not unfrequently do these knees sprout and become trees. The late Dr. Martin and I measured one cypress 39 feet in circumference here, and since I have found one which was larger.

In our gales I have never seen but one cypress uprooted ; their brace roots are long, but I cannot accept either theory of the knees."

It is not generally known that there are two forms of deciduous cypress. In what do they differ ?

THE STREET TREES OF WASHINGTON.—The traveler through most American States would suppose that Americans are limited to some half a dozen kinds of trees for their choice of shade. The Silver and Norway Maples, the Elm, and the Linden are the chief species seen. The Parking Commission of Washington, with the intelligence brought to bear on the subject by its three commissioners, Messrs, William R. Smith, William Saunders and John Saul, have found no less than 66 kinds which are well adapted for this purpose, and all these kinds can be seen in various parts of the city of Washington. Of these 10 kinds of Maples, 7 kinds of Poplars, 5 kinds of Elms, and even three kinds of Oaks have been found perfectly adapted to being good street trees. The Parking Commission of Washington has issued a map of the city, with the streets numbered, and the particular kind of trees referred to to correspond can be examined by the use of the map.

EARLY FLOWERING CHRYSANTHEMUMS.—As a pot plant for decorating, nothing is superior to the Chrysanthemum; but as an outdoor plant for the herbaceous border, although fairly hardy, it has never become popular,—from the fact that it scarcely commences to open its flowers until frost comes. If only a race of early flowered kinds could be produced, it would be of immense advantage to those who want to cultivate them in the open air. In France efforts have been made in this direction, and quite a large number of forms have been produced, which will flower long before the frost comes. One of these, of which we give a sketch annexed, from the London *Journal of Horticulture*, shows that considerable progress has been made. Usually when new races are introduced, the first forms are not very attractive—improvers are satisfied to get to the first point. In this case it would be earliness; but as we see from the illustration some of this race are already nearly as beautiful as the improved forms which bloom later. This particular variety was raised by Mons. Delaux, of Toulouse, in France, and has been named Gustave Grunewald. Our contemporary states that this photograph was taken on the 5th of August, thus showing the earliness of the variety. So far as known, this class has not yet been introduced into American gardens.

EARLY FLOWERING CHRYSANTHEMUM.

DESTRUCTION OF INSECTS. — The following valuable suggestions are from the pen of Mr. Geo. L. Clark, of Boston.

"Referring to your note in September number, headed "Tar-Grease and Caterpillars," I would say that several of our destructive moths *can* be kept off from fruit trees by a slight application of tar and grease. Many of the female moths have only rudimentary wings and pupate in the ground. They have to climb the tree to lay their eggs. The "canker worm" that did so much damage a few years ago is a case in point, the tussock moth is another. The most destructive caterpillar we have in New England is the American tent worm;—unfortunately both male and female have wings, and they cannot be kept from laying their eggs. In Newton, Massachusetts, they have been a great pest of late years. Last spring the local horticultural society offered a series of prizes ranging from one to fifteen dollars to the children of Newton for those collecting the largest number of belts of eggs. The female moth lays her eggs round the twigs of either cherry or or apple trees. One boy collected over sixteen thousand belts, and I believe there were some twenty or more that collected over one thousand. As each cluster or belt contains over two hundred eggs, the destruction was enormous, and the second brood of these insects was so small as not to be noticeable. It is a good way to get rid of them at the lowest cost. The eggs should be collected before April 1st, then the leaves are off the trees and the clusters easily seen."

RHODODENDRON FUNGUS.—Mr. John Warr, of Foxburg, Clarion Co., Pa., sends us some leaves of Azalea, which are spotted with some species of fungus, apparently allied to the kind which produces the spot on the leaves of the strawberry, with the inquiry as to its relation to the Rhododendron disease, to which has been before referred. It is, however, a different fungus. The Rhododendron fungus first attacks the branches, which it girdles, and then afterwards appears on the leaves. A solution of sulphate of copper, as frequently recommended, applied very early in the season, would no doubt be as effective in the case of the Azalea as it is with the Rhododendron and other plants.

MEMORIAL TREES.—No better memorial of any pleasant event can be secured than by planting a tree to commemorate it. The practice has long been common in the old world, and it is pleasant to note the excellent growth of it here. The private grounds of Queen Victoria, near Cowes in the Isle of Wight, is kept sacred from public eyes,—but the writer was specially favored on his last trip across the Atlantic, by permission to examine them, and one of the most agreeable enjoyments was the examination of the large number of trees planted in memory of the visit of good friends. Each tree was marked with the name of the visitor and the date when the tree was planted. In our country the famous and universally beloved proprietor of the Philadelphia *Public Ledger*, Mr Geo. W. Childs, follows in the same good path. His grounds are studded with memorial trees. No one visits the beautiful grounds at Wootton, without taking in these trees as amongst the pleasantest features.

REDWOOD TREES FROM CUTTINGS.—SEE P. 163.

The most recent cases of a great public character, was the planting of two trees to commemorate the great Fourth of July celebration at Roseland Park, the seat of the proprietor of the *Independent*. They were European elms, brought a few years ago by John Eliot Bowen, from the Emperor's garden at Charlottenberg, one is to be called the Columbus Elm, and the other the Grant Elm, after the great heroes named. Thousands attended the ceremonies. Senator Frye made the dedication speech at the planting of the Columbus tree,—and General Morgan and Attorney General Miller, did the same for the Grant tree. A remarkably pleasant circumstance incidental to these speeches, was the evident thought uppermost in the minds of the speakers, that not even by the most costly monuments could these great men be better honored than by the planting of these trees which are to bear their names.

TRANSPLANTING HOLLIES. — Hollies, as a general rule, are difficult to transplant. It has been found that in a number of trees transplanted in the fall with *all the leaves carefully cut off*, all lived, with perhaps one or two exceptions. The leaves being cut off the roots are not robbed of the sustinance which otherwise would have to be taken to supply the wants of nature.

Hollies as hedge plants have few equals. Although they are quite common in America as an ornamental tree, we seldom see them them used for hedges. In a noted cemetery in Lebanon, Pa., a very fine hedge of these plants is used to enclose a cemetery lot.

Holly hedges are common in England, especially in the agricultural districts; their dark green leaves and bright scarlet berries giving a beautiful appearance to the roads and lanes along which they are planted.

It grows in any locality and soil as well as in the spots where it is found in its natural forms.

CEREUS TRIANGULARIS.—Possibly one of the largest specimens in cultivation, is owned by Mrs. Theodosia Shepherd, of whose work at Ventura, California, there was a recent notice in MEEHANS' MONTHLY. This monster is over 40 feet in length, with branches and long climbing roots innumerable. It has monopolized all the corner of one two-story house, the ends of both verandahs, and is now on top of the roof where it has bloomed, freely. Its great creamy flowers (which open at 5 P. M., and close at 10 A. M.) are seen at a long distance, and make a fine show. "It is the most ambitious thing," says Mrs. Shepherd in a letter, "I ever saw; some of the roots by which it climbs are three yards long and cling to the wood tenaceously, till the young growth is hardened, when they loosen and hang like gray strings. They are light yellow in their young state."

CERCIS JAPONICA.—In addition to the note which we give of this plant in our last magazine, it might be stated, as showing how slowly beautiful things get into general notice, that the first plants were introduced in Europe in 1840 by the celebrated traveler, Siebold. It was first put into the trade in 1850 by Van Houtte, and produced the first seeds in Europe in 1853. The Italian *Journal of Horticulture* states that it is more highly appreciated in Italy than either the *Cercis Siliquastrum*, or the *C. Canadensis*. The same journal states that there is yet another species in Asia that has not yet been introduced, but is well worth the while of cultivators to look after. This is the *Cercis chinensis*. It states that the great traveler, Bunge, saw it growing, in all probability spontaneous, in the vicinity of Pekin. The flowers are said to be of a beautiful rose-color, but striped with white.

EXOCHORDA ALBERTI. — Cultivators are quite familiar with what has come to be known as the Pearl Flower, *Exochorda grandiflora*. The late Prof. Regel, of St. Petersburg, before his death, described and named as above, a new species from Central Asia, which is said to quite rival in beauty the Pearl Flower before noted. The habit and height to which it grows seems to be much the same as in the grandiflora. So far as known, it has not yet been introduced into our country.

STEAM ROAD WAGONS.—The *Stockton Mail* states that Peter Chalmers, a farmer of Farmington, Cal., has invented a steam wagon, in which he hauls the products of his farm to market. It is something unusual to have a wagon of this kind that can be used on common roads. It is, however, a rather expensive affair, as it cost over $4,500; still one may hope that when an invention of this kind is found practical, means may be found to simplify and cheapen the cost.

ROBINIA VISCOSA.—In the recent notice of this plant, it was stated that it had not been found wild since Michaux first discovered it. This certainly was the fact up to a few years ago, when a cultivated specimen had to be secured for the Jessup Collection, from the fact that no wild specimen could be found. Russell Bros. of Highlands, N. C., write that it has been found wild in that vicinity since that time, and it is no doubt the locality in which, or near which Michaux found it.

DESTRUCTION OF ANTS.—The ant is such an instructive creature, so industrious, and so intelligent, that it seems almost an act of cruelty to suggest methods for their wholesale destruction,—yet their interference with the cultivator is sometimes so unbearable that a correspondent is compelled to write to MEEHANS' MONTHLY to inquire how to get rid of them. Undoubtedly the best method, if it is not deemed too cruel, is to cut up meat into very small particles, saturate with deadly poison, and put it in their tracks, entirely secure from the reach of other creatures. There is no way so effective as this.

HARDY TREES AND SHRUBS AT KEW.—It is said that the Arboretum of Kew, which was very small twenty-six years ago, now contains over 3000 species or marked varieties of trees and shrubs. This, of course, does not include varieties of roses, rhododendrons, and such like plants.

THE TOMATO FUNGUS.—It is now definitely settled that the Tomato fungus is identical with the one so injurious to the potato, and known botanically as *Perenospora infestans*,—or the more recent name *Phytophthora infestans*.

FALL PLANTING.—Ellwanger & Barry say: —Primarily and principally its good, because the spring planting season is generally of such short duration that much intended work is necessarily omitted. In the fall there is abundance of time to plan and to plant, and the work can therefore be done more satisfactorily. The once prevalent notion that fall planting is not advantageous, has proved to be erroneous, and with the exception of evergreens, almost everything called hardy can be planted successfully in the autumn. We recommend and urge fall planting wherever it is possible.

PEACH CULTURE IN THE SOUTH.—Peach culture in the South, and especially in Florida, is assuming grand proportions, and as a consequence the raising and testing of new varieties is going on at an enthusiastic rate.

Taking up the catalogue of J. L. Taber of Glen St. Mary, one may find already sixty varieties, named and described as doing well in Florida, and yet Mr. Taber himself thinks there is room for improvement. There is generally no better evidence of the progress of culture in any branch of gardening, than an active desire to get the best. When it is remembered that the great work of A. J. Downing on "Fruits of America," which describes everything ever heard of up to the time of publication, 1869, had but 213 kinds, all told, in the country. It is something to note, that today a single collection should have one-fourth as many as the whole number of 20 years ago.

FRUITS AND VEGETABLES.

COCOA NUTS IN FLORIDA.—A few years ago a vessel laden with cocoa nuts was wrecked off the southern coast of Florida. These nuts, washed ashore, were planted in the sand, and in this way the first plants were obtained. These grew and in a few years bore nuts which were again planted, and enough were obtained to make plantations of commercial importance. The plantations being comparatively young, present a different appearance to those lofty things which illustrate school geographies, — and we give with this a sketch of one taken at Lake Worth by one of the conductors of MEEHANS' MONTHLY. The cocoa nuts were within reach, and could readily be gathered while standing on the ground. The trees are usually represented as being very difficult to climb; but the little ten year old girl, seen among the foliage in the picture, had no difficulty in reaching the position. The plant on the left is a guava—*Psidium pomiferum*.

A YOUNG COCOANUT TREE.

FRUITING STEMS OF GRAPE VINES.—Mr. F. A. Laurent, Philadelphia, inquires whether a growing branch of a grape will send out shoots which will bear bunches next year. As we understand the question, it will not do so. Cultivators of the vine endeavor to train up entirely new branches of the present season's growth, in order to secure fruit for the next season. The bearing branches of this year are generally cut entirely away.

PERSISTENCY OF VARIETIES.—Those who are devoted to abstract science frequently slur the observations of what they contemptuously call the practical man. We believe it was Sir Walter Scott who made a practice of speaking and entering warmly into conversation with every one he met, who would give him a chance. He is said to have stated that he got the most of his valuable and intelligent observations from men who, to use his expression, "wore tarpaulin hats and fustian jackets,"—this being the dress usually worn by the hard working and obscure men, who form what is known in England and Scotland as the working class. In scientific papers and serials, the mere practical man can often see statements made which he knows to be wrong, and which the scientific man himself, if he were to follow the advice given by Sir Walter Scott, could soon learn to be so. Instead of

LONG GARDEN CARROT.

this, they go on copying the one from the other; and statements which are entirely void of all foundation, are repeated and continuously repeated time and again for almost ages, that can be very easily refuted by these practical observations.

Nothing is more commonly repeated in botanical literature of the higher class than that varieties will not reproduce themselves, and, unlike species, they have not the gift of heredity,—that when they are sown, they, or some of them, will revert again to the original type, —and it is of frequent occurrence to read that such and such a plant must be a true species because it reproduces itself faithfully; yet a visit to the commonest garden will show, by the experience of garden vegetables, that this is not the case. Indeed, it could be very readily learned that a variety possesses just as strong hereditary power, as the most acknowledged species. As an illustration, the garden carrot, unquestionably, was derived from one original species—yet there are numberless varieties of it which could not have been reproduced by hybridization, and which can only be regarded as pure variations, which reproduce themselves just as truly as the original wild carrot of our fields. We give with this illustration of two distinct forms of carrot—one with lines tapering down to a long and narrow point, the other (on p. 173), which is perfectly cylindrical from summit to base, and then suddenly continues into a short tail. These varieties of carrots, which we have illustrated, are by no means rare instances of extreme differences in form which could be found in a collection of carrots; but we select them because they are well known, and if even one has not the actual specimens before them, they can remember the characters we have referred to, and know that the hereditary power is just as strong in the one form as in the other. Almost all kinds of garden vegetables will furnish similar illustrations.

THE ART OF RIPENING FRUIT.—To some extent gardening, as an art, is retrograding. The art of ripening pears, is almost a lost art. The Kieffer pear, for instance, in the hands of an expert, will equal any and excel most varieties, "as usually found in our markets," in all that makes a good pear loveable; but, as our good neighbor *Garden and Forest* well remarks, persons who are familiar with "the Kieffer, as found in the markets, will find it hard to believe that any skill can transform it into a desert pear of unexcelled quality; and yet the Committee on Fruits of the great Centennial Exposition, awarded to Mr. Kieffer—who was skilled in the art of pear ripening,—a certificate that his pears were the best in flavor of any pear that came before them. In fact the art is so nearly lost, that "market people" could not be made to believe anything.

SULPHATE OF COPPER FOR LEAF BLIGHT IN THE PEAR.—Prof. L. H. PAMMEL, of the Iowa Agricultural Experiment Station, at Ames, has applied sulphate of copper solution to young rows of pear seedlings that were afflicted with the leaf blight, and has found remarkable success from the application.

PLUMS IN MARKET.—A basket of handsome green gage plums, without freckle or speck, from S. D. Willard of Geneva, reminds us of the great advance made in plum management during recent years. Time was when it was as easy to get plums as gooseberries, when a small weevil know as the plum curculio, increased to such immense numbers, that rarely a single fruit escaped having an egg deposited in it—in popular language, became stung—and they then rotted before mature. The little beetle drops easily from the tree if suddenly jarred, and by the use of a padded pole, by which the branches are jarred without bruising the bark, the creatures fall on sheets and are collected and destroyed. In large orchards a man or men are kept at the work till the plums are ripe, the crop abundantly paying for the extra labor. Since this discovery plums are now seen in the markets as common as other fruits in proper season.

SENECA PEAR.—Mr. William Parry sends us a specimen of this new candidate for public favor. It is a very large pear—a little larger than the average Bartlett, rather more tapering to a point than that well known kind, and of somewhat paler color. It is represented as maturing immediately after the Bartlett,—and thus making a valuable variety to market men. It is very difficult to judge of the value of a new variety of pear by the fruit alone, as so much depends on the habit and character of the tree as of the fruit. Mr. Parry is a first-class judge of what is needed in this respect; and the fact that it receives his endorsement is a strong argument in favor of its value.

IMPROVED PLUMS.—Under date of August the 27th, we have again from Mr. Luther Burbank, of Santa Rosa, Cal., some more specimens of a newly improved plum, which he calls "The Golden." Mr. Burbank states that it was raised by a cross of the Miner with the Japan variety, known as Sweet Botan. The Miner weighs half an ounce, while the new variety is two ounces. It is one of the most beautiful plums that we have ever seen, looking far more like an old time nectarine than a plum. Mr. Burbank deserves great credit for the successful energy he is pursuing in improving this class of fruit.

THE EARLY OHIO GRAPE.—For all the great number of new varieties of grape introduced during the last quarter of a century, few are superior to the kinds which existed in the earlier part of this period. The newer grapes appear and disappear almost as rapidly as they come into popular favor. For this reason there is yet plenty of room for new varieties. The Curtice Co., of Portland, N. Y., are introducing a new variety under the name of the Early Ohio, which they say ripens in Portland about the middle of August, which is very early for that region, and besides being early it is a very large and showy black bunch. Should it prove as good as this reputable firm describes it to be, it ought to be a good addition to the list of grapes—large as the list already is.

SHORT GARDEN CARROT.—SEE P 172.

LARGEST FIG ORCHARD IN THE WORLD.—California claims a larger fig orchard devoted to fig trees than even some of the fig growing countries of the old world. One is said to occupy 460 acres of land. The trees are not yet all planted. The crops derived from some of the Californian fig trees are simply enormous. The *Rural Press* states "that 2160 pounds of figs were obtained from twelve trees, and it was believed that this was but ¼ of the whole that would mature on the same trees."

THE ORIGIN OF THE CONCORD GRAPE.—A recent account makes this a chance seedling of found by Mr. Bull, of Concord, Mass. But Mr. Bull once told the writer of this, that he sowed seeds of what he thought a good kind, and it was from one of these seedlings that the Concord sprang.

BIOGRAPHY AND LITERATURE.

MEMORIES OF THE PAST.

The leaves we knew
Are gone, these many summers, and the winds
Have scattered them all roughly through the world;
But still, in calm and venerable strength,
The old stems lift their burdens up to heaven,
And the young leaves to the same pleasant tune,
Drink in the light, and strengthen, and grow fair.

N. P. Willis.

Mr. Burnet Landreth.—It is pleasant to know that the work of our scientific laborers in this country so frequently receives appreciation abroad. Mr. Burnet Landreth, who was the able Chief of the Department of Agriculture during the great Centennial Exhibition, received from the French government a decoration as Chevalier of the Legion of Honor. It is usual for many who receive these honors to stand just where these honors leave them—it is very rare that the same party receives an additional honor as time rolls by. It is with pleasure, however, that we note that the French government has recently again honored Mr. Landreth by making a promotion in this Legion, and his title is now Officer of the French Legion of Honor.

William Penn's Treaty Tree.—History records that William Penn made his treaty with the Indians under an elm tree on the banks of the Delaware. The aged tree blew over in a storm many years ago, but young ones from it are believed to be in existence. In the hope of preserving this historic spot, the city of Philadelphia has recently taken possession of two acres of ground, in the midst of which this tree formerly grew, and some young specimen that has a clear and undoubted record as being a descendant of the original tree will probably be planted there. The plot has been taken in accordance with the recent small park movement. While preserving historic associations, it will afford a breathing spot on the banks of the river for a dense manufacturing population, of which this is, in a measure, the centre.

The History of the Weeping Willow.—Not having time for both studies, an English nobleman was asked by his son whether he should take up history or fiction. He replied: "Fiction by all means, as it is more accurate than history." This anecdote frequently recurs to the conductor; and the enclosed, which we are surprised to see credited to the usually accurate *Boston Post*, illustrates the point:

"When Alexander Pope visited the Orient two centuries ago he obtained a slip of one of the willows beside the waters of Babylon, whereon the children of Israel hung their harps in the days of captivity. Planting the wand upon his return to England, he secured a thrifty tree in time. From this latter Martha Washington procured a twig, which, it is said, she brought to Arlington Heights, with the same result. And now, a tree grown from the slip taken from hers had just been planted in the Indiana State House grounds."

Intelligent people now perfectly understand that the weeping willow is a native of China, introduced from there by the Dutch, and sent from Holland as a present to a Queen of one of the Georges, and that the first we know in England was this one planted at Hampton Court Palace, near to Pope's residence, and from whence Pope's willow at Twickenham probably came.

No species of willow grows in the part of the world where Babylon was,—and the "Willows" were probably Oleanders which have been translated willows; and which were planted everywhere about the city in Babylonian times.

Jean Ingelow.—A great point in the pursuit of gardening or the study of flowers is the relaxation it affords from other mental occupations. It is the universal testimony that nothing equals such studies. Jean Ingelow, the authoress, whose delightful tales will live long after she passes away, has recently stated that the study of botany has ever been one of her best relaxatives, and so say they all.

WILLIAM R. SMITH.—Few men are better known, in connection with intelligent horticulture, than Mr. William R. Smith, the superintendent of the Botanic Garden at Washington. This Botanic Garden came into existence by reason of the collection of seeds and plants made on the Wilkes' Exploring Expedition. Not knowing what to do with them, a small tract of land was set apart in Washington, under the control of the Librarian of Congress ; and Mr. Smith, who was then staying with Mr. Robert Buist, at Philadelphia, was chosen for the position. This was the origin of the Botanic Garden. Its superintendency is probably one of the most difficult positions that one can be called upon to fill in Washington in a public capacity of that kind. The superintendent is open to criticisms from every one who feels that he is a sovereign in the great republic ; and yet so judiciously has Mr. Smith filled the position that there is probably no more popular person in the whole range of Washington institutions than he. Mr. Smith was born in Scotland in 1828, and studied at Kew in 1853. Prof. Asa Gray was then studying the Herbarium of Kew, when an acquaintance sprang up between him and Mr. Smith, which lasted in firm friendship until the death of Dr. Gray. Possibly few of Mr. Smith's public benefactions have been greater than his services as President of the Parking Commission of the City of Washington, which he has so ably filled during the last 18 years. To-day the trees of Washington are the models which every city desires to take in the arboreal improvement of its streets.

WILLIAM R. SMITH.

LEWIS AND CLARK.—The publishers of Lippincott's Biographical Dictionary believe that their editor must have had the authority of some member of the family for the orthography, Clark. Our correspondent who contends for Clark, refers to the Post-office Guide, which has an office "Clarke" where the family had its home, and to Clarke's Fork in Montana, named in honor of the early explorer. Clarke is probably correct, and the dictionary has probably met with a case which often occurs, where the name is spelt variously by members of the same family. It would seem a small matter only for the fact that when a man's memory is to be honored, if his name is not correctly spelled, the honor is in a measure lost.

WILLIAM DAVISON. — IMPROVED BOUVARDIAS.—No flower is so popular in America with cut flower dealers as the Bouvardia. Its flowers being of a leathery texture continue a long time without withering, which is one of the great essentials of a first-class florist flower. Many thousands of dollars have been invested in its cultivation, and thousands of dollars of profits made thereby. It should not be forgotten that we owe the first great advance in this direction to Mr. William Davison, a florist of Tenafly, N. J., whose variety, called *Bouvardia Davisoni*, was the first great advance in the direction of improvement. It will be a satisfaction to know that this great flower benefactor is still living in good health at the address named.

PROF. WILLIAM TRELEASE.—Prof. Trelease is now achieving a world wide reputation in connection with the directorship with the Missouri Botanical Gardens, founded by the late Mr. Shaw. He was born at Mt. Vernon, N. Y., on the 22nd of February, 1857, and graduated at the Cornell University, in 1880, becoming instructor of botany before leaving that Institution. From 1881 to 1885 he was Professor of Botany in the University of Wisconsin. He obtained the degree of Doctor of Science from Harvard University, in 1884. He is still Professor of Botany in the Washington University of Missouri. He is the author of a number of valuable works in several departments of natural history—botany being his favorite study.

GENERAL NOTES.

ROADSIDE WEEDS. — While renewing his subscription, Mr. Eugene Schieffelin kindly says ;—"I am very well satisfied with it as it is, but I sometimes think that it would be more attractive to the general public, if the *common* weeds of the roadside, the woods and the fields were more especially the subject of the illustrations. It would thus become a sort of handbook on the subject for which I think there is a need."

With which we are in cordial sympathy. The trouble is to get good photos of these wild things, so as to make characteristic cuts of their general features. Sketches of the plant individually can always be had,—but it is desirable to have the whole as they grow in a mass in order to get their general features in the make up of our wild floral scenery. If any friends out with their cameras, should come across any striking plant in this condition and would take a "photograph" for us, we would be much obliged.

HERBARIUM POISON. — Mr. H. V. Turner, King of Prussia, Pa., inquires for the best method of preserving herbarium specimens from the attacks of insects, which are very destructive to dried plants. Botanists usually employ a solution of corrosive sublimate in alcohol—the liquid being placed in a flat dish—the specimens held up by a nipper—dipped for a few minutes in this solution—then laid on paper, when they soon dry. Many chemists keep the material already mixed for customers, and it is only necessary to send a small demijohn and ask for poison for dried specimens of plants. Certainly it is kept in this condition by Carpenter, Henszey & Co., the well known druggists of Philadelphia.

FIGS.—A correspondent, from South Carolina, remarks : "Francis Gentil's plan of keeping figs over night to be eaten the next day, would not do with us in this part of the world. If ripe when picked they must be eaten a very short time thereafter. When kept they soon become sour, and altogether unfit for food."

BOLTONIA LATISQUAMA.—Among the earlier issues of MEEHANS' MONTHLY there appeared a colored plate of *Boltonia asteroides*, and reference was made to a much prettier one found in the West named *Boltonia latisquama*. In the species painted in the Monthly, the heads of flowers have whitish pink rays, but in this species the rays are violet-blue. It was first discovered on the Kansas River, by the late Dr. C. C. Parry, and has not yet found itself in general cultivation. *Garden and Forest*, for June the 8th, gives a full page illustration and a good account of it.

GREEN MOUNTAIN GRAPE.—Last year we received specimens of this new grape from Messrs. Stephen Hoyt's Sons, but they were not in a condition to warrant a conscientious opinion about them. This season we have had better success, a fine bunch reaching us in perfect order. It is a very large bunch, with numerous berries, rather smaller than the Niagara, and with a very thin skin. The flavor is entirely devoid of the foxy character, which some people appreciate but others dislike. To our mind it will be a close competitor with the popular Niagara, which is very high praise.

VICIA CRACCA.—Mr. N. B. Davenport, of Crosshill, S. C., in relation to a recent note in MEEHANS' MONTHLY, inquires whether seed of this plant is collected for sale by farmers or others in this country? To the best of our knowledge it is not. All the seed in the trade being imported from the old world.

OUR NEXT PLATE. — *Pavonia Wrightii*, Wright's Pavonia, named after Mr. Charles Wright who collected it in Texas, in 1849, will be our next illustration. Few plants give better opportunities for study than this. Its continual bloom of bright rosy petals and even its leaves being peculiarly affected by the sunlight. Flowers opening in early morning on a bright sunny day close in a few hours.

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PAVONIA WRIGHTII.

WRIGHT'S PAVONIA.

NATURAL ORDER, MALVACEÆ.

PAVONIA WRIGHTII, Gray.—Stems shrubby, hairy; leaves ovate-cordate, acute, coarsely serrate, coriaceous, the upper surface shining, petioles slender, as long, or sometimes longer than the leaves; flowers solitary in the axils; peduncles slender, rather longer than the petioles; involucre usually of five linear bracts about the length of the calyx; calyx lobes ovate-acuminate, about one-third the length of the petals; petals narrowly obovate, somewhat hairy; staminal tube strongly recurved; carpels five, smooth. (See Gray's *Genera* for illustration, and generic description.)

The literature connected with this very beautiful Texan plant is very slight,—indeed, comparatively nothing has been written about it, though it frequently comes to hand in the dried collections of plant gatherers. Our illustration was prepared from a plant raised from seed given the author some years ago by Professor S. B. Buckley, State Geologist of Texas.

The first knowledge of the plant seems to have been obtained through Mr. F. Lindheimer, a botanist, who so early as 1843 made some collections in Texas. Some of his collections, together with others made about the same time by Professor Roemer, were placed in the hands of Rev. Adolph Scheele, a clergyman settled at Heersam in Germany, who died in 1864. He was regarded as an excellent botanist, but the specimens gathered in these early days of Texan exploration seem to have been imperfect, for botanists in these days have had difficulty in recognizing the plants under his names. In the Linnæa he describes *Pavonia lasiopetela*, but so imperfectly that when in 1849 Dr. Gray issued his "Illustrated Genera" of North American plants, he did not at first recognize the relationship, and it was figured as *Pavonia Wrightii*,—in compliment to an eminent explorer of Texan plants. In the end of that volume, however, he notes that it is probably the same as Scheele's plant, and in "Plantæ Lindheimerianæ," issued soon after the work cited, he remarks, "It is a low shrubby species, with handsome rose-colored flowers, which are larger in the wild than in our cultivated plant, from which the figure in the 'Genera Illustrata,' was made. The seeds are glabrous, except a little pubescence at the chalaza; and in some other respects, also, the species is not very well characterized by Scheele. His name, from its priority of publication, should probably be adopted, although so badly chosen; for the petals, at most sparingly stellate-pubescent externally, are often nearly or quite glabrous."

The plant we have illustrated accords with well authenticated specimens in herbariums of Dr. Gray's *Pavonia Wrightii* — differing only in those minor characters which botanists in these times would hardly regard as of specific value; but the petals are pubescent both within and without. Further, no botanist since Scheele's time seems to have collected anything that he would refer to that botanist's plant as distinct from *Pavonia Wrightii*. It seems quite likely that they are both the same thing. It would have been described here under the name of *Pavonia lasiocarpa*, giving *Pavonia Wrightii* as a synonym, only for the fact that the excellent botanist, Mr. Sereno Watson, in his "Bibliographical Index," seems yet to have reason for regarding them as distinct. If this view of their identity should prevail, it gives but two species of this rather large genus to the United States, the other being *Pavonia hastata*, one of the original species of Cavanilles, the Spanish botanist, who first gave the genus its name of Pavonia. After Mr. Lindheimer the plant was again collected by Mr. Charles Wright, for whom Dr. Gray named it, in 1849 during an expedition made that year. He was in Galveston, and finding that a body of United States troops were about to march from San Antonio to El Paso, he, by permission of the War Department, was allowed to accompany them in the pursuit of science, and he spent the whole summer in this delightful task, gathering together the materials for the "Plantæ Wrightiana" one of the grandest of the early literary monuments of

which botanical science in the United States can boast. His plants were found growing on the rocky cliffs of the Nueces River and hills of the Rio Frio. It has since been collected in New Mexico, and this is about all that is known so far of its geographical range.

It has not been the good fortune of the writer to collect so far in the south and west of Texas as to meet with this plant in its natural places of growth, but judging by its behaviour under cultivation it must be an important feature in the natural scenery in which it is found. It commences to bloom in early Summer, and continues to produce its bright rosy flowers as it grows, ceasing to blossom only when frost comes. Though the flower lasts but a few days, the plant has so many little branches, that it is rare to find it without one open, and usually there are enough to make the plant quite gay. The duration of the flowers is, however, affected by light; and in warm bright sunshine, a flower opening for the first time in early morning will close finally soon after noon. In dull weather a flower will last several days,—in fact, sometimes long enough for a flower at one node to open before the one beneath has faded, and we have been able to get such an illustration for the picture given here. It may be noted that the influence of light on the closing of the flower extends also to the leaves. When the sunshine is bright, the leaf blade bends down at the apex of the petiole, as partially indicated in Fig. 2. When the light is unusually intense, the leaf blade will sometimes curve back till the apex touches the main branch. As the various parts of a flower are but modified leaves, we may look for the same behaviour sometimes in the leaves as in the flowers when under the same influence, so that the sensitiveness of the leaves as well as the flowers to light in this instance seems reasonable enough.

The genus, as it now stands, was given by Cavanilles in honor of Joseph Pavon, who accompanied Dombey in the celebrated expedition to Peru and Chili, under the combined auspices of the Kings of France and Spain, and which expedition was made memorable to plant lovers by the introduction of the lemon scented verbena, *Aloysia citriodora*. It was a very unfortunate expedition by the international jealousies and personal enmities which it engendered, and it is to the credit of Pavon that he almost alone seems to have retained the respect of the opposing sections. Several attempts were made to honor him. J. C. Mutis, a renowned Spanish botanist, dedicated the *Tigridia*—the "Ocoloxochitl" or "Tiger flower" of the Peruvians to him; though the younger Linnæus afterwards united it with another as *Ferraria Pavonia*,—or, as it is at the present time, *Tigridia Pavonia*—the well known bulbous plant of our gardens.

Pavon is best known by his *Flora of Peru and Chili*, a magnificent work in which all the new species of Dombey's expedition are minutely figured. The French projected the expedition "in search of useful plants," in 1775, and the Spaniards joined in it the next year, appointing Pavon, Brunete, Galvez and another, to aid Dombey, and furnishing the vessel, the "Peruviano." The expedition arrived at Lima on September 8th, 1778. In his observations he concluded that some of the diseases of the Peruvians arose from their use of the tomato as food. The travelers separated on their journey, Dombey returning to Madrid in 1785, leaving Pavon in the New World. He seems to have been treated scandalously by the Spaniards, and he conceived aversion to all scientific men but his old comrade Pavon, whom he esteemed to the last. He had left the old world for Philadelphia, but in a war then raging between England and Spain, his vessel was captured by an English privateer, and he died at Montserrat in prison, February 19th, 1796. It is remarkable that the results of Dombey's daring and dangerous expedition, more valuable perhaps to the progress of humanity than many that had ever been undertaken, were rendered almost useless by war and international jealousies,—and that the work of the one our plant was named for, Joseph Pavon, stands as the chief result of Dombey's expedition.

EXPLANATION OF THE PLATE.—1. A branch from a plant about two feet high. 2. Shows the bending of the leaf blade under the influence of light. 3. Seed vessel, nearly mature, with the upper portion of the sepals cut away to show the five carpels,—the whole surrounded by the five narrow bractlets of the involucre.

WILD FLOWERS AND NATURE.

THE WINTER'S RIDE.

Through the forest rode he, and the skeleton trees
Groaned, withered and wild, 'gainst the desolate breeze;
And shook their hoar locks as the Forest King flew by,
Whilst the hail rattled round, like a volley from high:
"Ho: ho:" shouted he, "my old Sylvans, ye're bare,
But my minister, Snow, shall find robes for your wear."

CHARLES SWAIN.

LENGTHENING OF TREE TRUNKS.—A correspondent is disposed to question a statement recently made in MEEHANS' MONTHLY that the tree trunk never elongates after having been once formed. He refers to some branches, which he states certainly started from the trunk eight feet from the ground a number of years ago, and are now nine feet; and this he thinks proves that the trunk elongates. These are no doubt ascending branches, and as the trunk thickens, the lower portion of the angular divergence is, of course, covered, which makes it appear as if the branch started from the tree that much higher; if the branches had proceeded in a perfectly horizontal manner, the appearance would have been different. Any one can see this by examining a pine or spruce tree, in which the branches come out horizontally. These pine trees seem, as it were, to sit on the ground by their lower branches; and although the tree may be fifty years old, the branches are still there. This thought alone would show that tree trunks never elongate after being once formed.

BOTANY AS AN AID IN ETHNOLOGY. — Dr. Krause, of Kiel, has proven that the original birch referred to by old writers was the *Betula alba*, and he has further shown that this word was originally given to the plant by the Aryan nations. This proves, therefore, that this ancient race inhabitated high northern regions in ancient times, where alone this species of birch is found.

CLEISTOGAMIC FLOWERS IN THE VIOLET.—Almost all admirers of flowers know, by this time, that most of the violets produce seed in summer time from flower buds that never open —flowers that have no petals, and seem very far removed from flowers as we understand them. These flowers are called cleistogamic, that is to say, flowers which reproduce in secret. Botanists have generally assumed that plants produce, in some instances, these cleistogamic flowers, in order to save energy. This is Mr. Darwin's view. A correspondent of the *Country Gentleman*, however, makes the entirely novel and ingenious suggestion that as the perfect flowers seldom produce seed, the plant has adopted this short way of seeding in order to make up for the error of depending on insects, The theory is that the bright colored petals are for the attraction of insects. The correspondent suggested, "As the insect has failed to do its work properly in this instance, as a last resource the plant has adopted the cleistogene habit."

SECRET FLOWERS IN THE VIOLET.—Mr. A. Catlin, Richmond, Va., writes:

"I see in our violet bed a plant like a violet, of extremely dark green foliage, leaves very large, and grows during the hottest sun with increased vigor. Some buds appeared lately, and to-day we noticed them large and hoped to see a large blossom, but upon closer examination revealed only ripe pods of seeds on short stems, just above the soil."

A large number of species of plants produce secret flowers,—technically cleistogene flowers —and large numbers of violets especially produce them. In these cases the earlier Spring flowers are normal, that is to say, have petals and a certain number of stamens,—the later secret flowers have mere rudiments of petals, usually fewer stamens, and the bud never opens, but the organs fertilize themselves while still in the bud. The species in which this phenomenon is most frequently seen is *Viola cucullata*,—the common blue violet.

LADIES' TRACES.—Mr. Frederick Jaekel, Hollidaysburg, Pa., sends us the following note with a remarkably fine specimen of *Spiranthes cernua*, which is probably rarely found in such elevated regions—we suppose on towards 2,000 feet above the sea level :—

"I took the liberty to send to your address by mail a little box containing a flower, this single specimen I have observed for several years, and could not find another one for miles around here. It grew on my fruit farm in sandy loam, washed on a ledge of sandstone rocks by the action of water, for centuries. Would you be kind enough and give me the name of the plant in the next issue of your MEEHANS' MONTHLY."

TILLANDSIA WILSONI.—SEE P. 184.

This species of Ladies' Traces is closely allied to the original Ladies' Trace of the old English authors, which was once called *Neottia spiralis*, now *Spiranthes autumnalis*. Some modern authors have changed the ancient name traces to tresses, not evidently knowing the derivation of the term. A trace was in olden times any material of a three-twisted character, that would form cords ; it is indeed a derivative of the ancient word "trace"—a cord or twist,—and the term was especially applied to those cords or ropes used to draw ploughs or wagons. These, though now made of leather, are still traces. Ladies' traces, were fine white silk and satin cords, which drew together the open upper portions of ladies' dresses, as may be seen in the portraits of fine ladies, taken a few hundred years ago. The word tress, is applied to ringlets of hair on ladies.

The orthography "tress" is common in Spenser's works, as signifying a ringlet,—while the old botanist Gerard, a contemporary of Spenser's, and born within a few years of him, invariably uses "traces" when speaking of these plants, which he would not do if he meant tress, as this word as well as trace for the two distinct ideas, were in common use. Indeed Gerard gives the reason for "Ladies Traces," and which has no relation to the tresses of ladies' hair.

This matter was briefly gone into when the plate of *Spiranthes cernua* appeared in the "Flowers and Ferns of the United States," but is more extended here on account of some criticism on the conclusion there reached.

ENDURANCE OF BARK.—It does not seem to have been noted that bark resists the destructive power of the elements to a much greater degree than the woody substance. An interesting illustration of this came before the writer recently. A large block of greenhouses was erected some twenty-five years ago,—and on a piece of ground, on which had been grown large quantities of osage orange plants, the roots of which penetrated deeply in the ground. On the removal of these greenhouses recently, these old roots of the osage orange were found to be still in existence so far as the bark which enclosed them was concerned,—but the wood which the bark enclosed had decayed entirely away, leaving huge lengths of bark like hollow pipes, pushing through the clay. It furnished a new thought as to the manner in which water is conveyed through the soil—hollow roots, or rather roots represented by the bark furnishing excellent conduits by which water can easily pass to great depths in the ground.

STAMENS GROWING OUT OF PISTILS.—Mr. J. Edmond Clark, of York, in England, writes to New York *Science* that he has a specimen of the Arctic poppy, *Papaver nudicaule*, in which the stamens are found growing out of the pistils. This is a very unusual occurrence in vegetable morphology.

TEXTILE VALUE OF THE HIBISCUS. — Mr. Burnet Landreth writes :

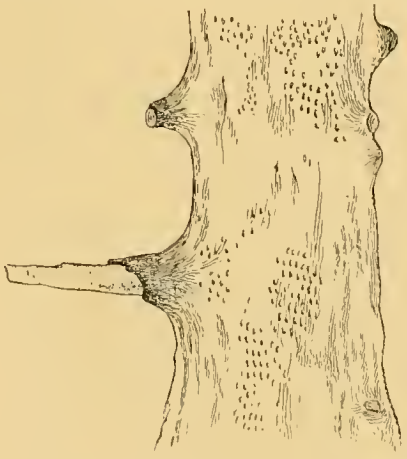
The last paragraph in the October number of the MONTHLY treats upon the beauty of the *Hibiscus moscheutos* when seen growing in natural or artificial marshes ; but reference was omitted in the article to the value of the plant as a fibre producer, for which purpose it will some day be largely introduced.

There are many valuable fibre plants unused, often almost unknown,— for instance this Hibiscus, the *Sigillaria multiflora*, or Solomon's Seal, the *Abutilon Avicennæ*—the last the best of any of the common series of the middle states—producing a fibre so strong and silky as almost to equal ramie. Now, while ramie can only profitably be grown in the sugar and cotton belts, the Abutilon can but be grown in the Indian corn belt, thus affording to middle states' farmers an opportunity to diversify their system by the cultivation of a valuable fibre plant.

The *Hibiscus Mosheutos* is easily propagated from seed and will grow two feet high the first year. I have a small patch now grown for a fibre experiment. Grown thickly it will grow straight, but when open it branches ; of course, for fibre it must be long and without side limbs.

THE OLD FLORA OF NORTH AMERICA. — Prof. Leo Lesquereaux determined before his death that the flora that existed on portions of our continent ages ago, was different from that now existing,—but that the existing flora partakes of the characters of the old, and so certainly was not a flora imported from some other region. In other words, the present American flora came into existence on the spot where it is now found, and is a new creation following the old which also came into existence here in its day and generations also. The manner of its introduction, whether by direct genesis from the old, or by special formation was once a question, but the evolutionary view is now generally accepted.

THE GROWTH OF WOOD.—For all that has been written the growth of wood is still little understood. As so many practical operations of gardening are dependent on this knowledge, a brief chapter explaining it will be valuable. Every one knows that a new circle of wood is added yearly,—but this new addition is not slipped down over the others like a section of a telescope. The growth is produced from the living cells left over from the last annual circle of wood. Towards mid-summer, when the leaves of the tree have properly prepared food out of which to form new wood, these cells of last year, make new cells, along the whole surface of the last year's wood,—and, speaking of our common trees, make continuously successive "swarms" of cells till the years' thickness has been effected. It is usually all accomplished in about six weeks. The quantity of cells produced, that is to say in effect the thickness of the annual growth of wood, is a question of food. The more abundant the food at command in a certain spot,



WOOD GROWTH OF A NORWAY SPRUCE.
From a Pencil Sketch by Mrs. J. F. Meehan.

the thicker will the woody layer be. This is prettily illustrated by a twenty year old Norway Spruce on the conductors' grounds (see above)—the sketch taken at the first tier of branches near the ground. The branch of which the small portion figured is a section, is perfectly alive and healthy, but as all its laterals were overgrown by the progress of overhead branches, the only healthy leaves were at the extremity, far away from the main branch. But the trunk, with its magnificent head of healthy branches, had a better chance for food,—and hence the cells forming its trunk had food enough to make a growth that is creeping along and covering the living wood of the lateral branch. It is growing over the branch just as it would if it had a huge wound to cover.

VIGOR OF INTRODUCED PLANTS.—Mr. Frank N. Tillinghast, Greenport, New York, writes:

"I have just read the note on "Vigor of Introduced Plants" in the October number of the MONTHLY. Speaking of the Cardoon you say: "The Cardoon, which we have recently referred to as a vegetable quite desirable to cultivate, is so overrunning the plains of South America that a large number of native plants have already been crowded out by it," etc. Darwin, as far back as 1833, in his "Naturalist's Voyage Round the World," says of it: 'It occurs in these latitudes on both sides of the Cordillera, across the continent. I saw it in unfrequented spots in Chile, Entre Rios, and Banda Oriental. In the later country alone, very many (probably several hundred) square miles are covered by one mass of these prickly plants, and are impenetrable by man or beast. Over the undulating plains, where these great beds occur, nothing else can now live. Before their introduction, however, the surface must have supported, as in other parts, a rank herbage. I doubt whether any case is on record of an invasion on so grand a scale of one plant over the aborigines.'

"As an illustration of the rapid spread of a species introduced to a new locality, though of course on a much smaller scale, I would mention the occupation of a large tract near Montauk Point, on Long Island, by the Yellow Thistle (*Cnicus horridulus*, Pursh.) Five or six years ago a few plants of this species made their appearance at the western edge of the Montauk Hills. The winds, of course, scattered the seeds "far and wide." From these came plants that multiplied so rapidly that now many miles of the hills and of the sandy plains to the westward are covered by them. So closely are the plants crowded together that, in one place, it is said, not a square yard of the ground is unoccupied by them for a mile or more in every direction. A large area which was formerly fine pasturage is now in possession of this weed, which threatens to travel eastward to the Point and use up the thousands of acres of good grazing land on the Montauk Hills."

HOW TOADS EAT.—Some controversy is going on in some of the papers as to whether the toad draws its food into its mouth solely by its tongue, or uses its hands, as one might say, to aid the food into the mouth. Any one can readily see how the process is accomplished by watching a toad when it is not disturbed. If one will get where he cannot be seen by the toad and drop beetles, or any kind of insects in front of the toad's mouth, the tongue may be seen to be thrown out as rapidly as lightening, twisting around the insect and drawing it rapidly into the mouth. The tongue only is used for these operations. Mrs. William Seliger, in the *Hartford Daily Times* of recent date, has some excellent points confirming these facts.

A NEW OAK.—In the wild condition the species of oak vary very much, and just what should be regarded as a species, or what as a variety varies according to the views of the botanical expert who takes the matter in hand. Recently one of the forms between the Black Jack Oak, *Quercus nigra*, and the dwarf, holly-leaved oak, *Quercus ilicifolia*, has been considered distinct enough to receive a specific name; and has been designated by Mr. William T. Davis, a good botanist, *Quercus Brittoni*. Mr. Davis, however, does not regard it so much a natural variation as a hybrid between the two species above named.

ROBINIA VISCOSA.—Mr. H. P. Kelsey, Linville, N. C.:—

"In a short article in your September issue, entitled, "Rare Plants in North Carolina," you mentioned *Robinia viscosa* as being a notable instance of one of Michaux's discoveries which had never been found since. I would state that I have it in my collection, having collected it in three or four different localities in Macon Co., this State, and am quite sure it has been found elsewhere in North Carolina."

It is presumed, however, that it has been rediscovered only in comparatively recent years.

TEAK WOOD.—This belongs to a verbenaceous plant, *Tectona grandis*, and is as hard as Locust wood. The latter, however, is not elastic, and will not hold nails during change of temperature. The iron expands and contracts while the Locust wood will not. The same is true of Teak wood. But for mere endurance, both will last for centuries. Locust is heavy, Teak light,—and hence of value in ship building.

GENERAL GARDENING.

THE GREENHOUSE IN THE WINTER.

Who loves a garden, loves a greenhouse too.
Unconscious of a less propitious clime,
There blooms exotic beauty, warm and snug,
While the winds whistle and the snows descend,
The spicy myrtle with unwith'ring leaf
Shines there, and flourishes. COWPER.

ROAD MAKING.—Popular attention at the present time is probably more attracted to road making than ever before It is self-evident that a bad road is a costly affair—more horses are required to draw a load, and more wear and tear of vehicles and cart gear occur on a bad road than on a good one ; population does not increase along the line of a bad road as it does along a good avenue, and with no increase of population there is little increase in the value of land. Certainly a good road is universally conceded to be a great popular advantage ; the difficulty always has been how to provide these good roads while population is scarce. Good roads cost money, and money must be raised somewhere by taxation. To tax low rate property for the value of a good road in many cases is absolute confiscation. We may tell the owner that if he can only hold on, all the great advantages of a good road will come to him in time ; but, unfortunately, few land owners can wait that long. It is not a question of whether good roads are better than bad ones ; every one understands that the great question is how to secure these good roads, so that the generation which pays for it shall enjoy some of the advantages. In the admirable volume of the Transactions of the Massachusetts Horticultural Society for the year 1892, now before us, considerable attention is given to road making and maintenance—the subject having been introduced by Mr. Henry Irwin, a civil engineer. The advantages of good roads are very clearly pointed out and the manner of making them to the best advantage also well displayed ; but the main point of practical value connected with the financial aspect, did not receive much consideration ; in fact, it is just here that the great puzzle comes in.

ROSE CULTURE.—During the winter season lovers of roses should carefully examine their plants and ascertain whether they have been grafted or are growing on their own roots, as from the grafted, suckers are always sure to come up from the stock,—and as the stock is a variety of greater vigor than the kind grafted, it in time draws all the nourishment to itself, and the grafted portion dies in the course of a few years. One ignorant of this fact wonders why the whole character of his rose plantation seems to have degenerated. The stock, or suckers from it can readily be known by practical examination—the character of the wood being always different from the kind grafted on it.

It is always better also to prune roses early in the winter rather than to wait till Spring, for the reason that there is a large amount of evaporation during frosty weather from the unripe wood, and this evaporation is drawn from the more solid portions of the stems, as well as from the portion which is unripe. A second pruning will be necessary before the buds burst in the spring, as, in most cases, there will be some portions injured during the winter, in spite of the earlier precautions taken. Again, the thin and weaker wood should be cut out, as this gives more strength to that which is left.

As a general principle also in pruning, it is much better to prune early than to prune late, for the reason suggested in the last paragraph. Different classes of roses require different systems of pruning. Those which flower from vigorous young wood may be pruned rather severely ; but those which seem to form flower buds from the old wood, to a great extent, should have the branches left on. Noisette roses, for instance, usually flower at the ends of the young growth, and this is the class that may be pruned in severely ; while roses like the prairie roses and the hybrid perpetuals, require to be pruned long, because most of the flowers are produced on short branches which proceed from the growth of the previous year.

FLORIDA AIR PLANTS.—Florida is fast becoming one of the most popular places for winter resort for people who are more northwardly situated, and these bring back from Florida many of its floral treasures; and are continually inquiring of the authorities as to the proper method of cultivating them. The air plants, especially, are usually found in localities where there is at certain seasons considerable moisture in the air, and when brought back to more northern points the atmospheric dryness is against success. One of the best methods of treatment is represented in the cut (see p. 180), showing a plant of *Tillandsia Wilsoni*, which was brought back several years ago by members of the conductor's family. The plants are first attached to a block of wood by wire, and the wood is then planted in a pot of earth or damp moss; this is kept continually damp, or one might say, even wet, and the moisture escaping by evaporation helps the plant. Not only does the evaporation help the plant, but the wood itself absorbs moisture from the soil, and keeps the roots of the air plant additionally moist. Besides these air plants, orchids also can be grown in this way in green-houses which are comparatively dry. Very soon after the fastening of the plant by wire to the blocks, if the atmosphere be sufficiently moist, the young roots will push out and attach the plant to the block. As this is the season of the year when people visit Florida and bring back these beautiful mementos of their trip, these practical illustrations will be of great value to many.

HISTORY OF CONIFERÆ.—It is said that one Eastern species of Coniferæ—the Balsam Fir, was first introduced into England in 1697, by the Bishop of London; the Bishop is also credited with the first planting there of the White and Black Spruce, although the date is not given. The White Pine was introduced first into France in the middle of the sixteenth century; the first introduction into English gardens is dated at 1705. Hemlock Spruce is believed to have been first introduced into England in 1786 by Peter Collinson, through Bartram, while the Balsam Fir of North Carolina, known as the Frazer Fir, was introduced by Frazer, who collected it in North Carolina in 1811.

PAULOWNIA.—This tree is frequently supposed to be tender—that is to say that it will not endure a temperature much below 20 or 30 below the freezing point. This is true while the plants are young. For the first two or three years they are very apt to be cut to the ground by a severe frost; but they always sprout up again and achieve increased hardiness with age; in fact, after a plant is three or four years old it will probably endure the severest winter climates of the Northwest. It cannot be said to be, on the whole, a beautiful tree; the large, coarse leaves resemble those of luxuriant specimens of a pumpkin or squash—extremely coarse and harsh, and devoid of beauty. The large, blue, trumpet shaped flowers, which appear in summer, give it, however, an interest at that season which few other trees possess; and, aside from this, they possess a delicious fragrance, which is thrown into the atmosphere for considerable distances around. The trees are much valued on this account. And, again, it is valued for it rapid growth—few trees will increase in girth so fast as a Paulownia. In Japan the timber is very highly valued, especially for furniture; and it is more than likely that in the future this tree will take a prominent place in successful forestry culture in the United States, It was named Paulownia after one of the empresses of Russia; and for this reason it has been called the Empress tree, although to our mind it is very little more difficult to use the scientific than the popular name. Another advantage of the scientific name is that the whole world knows what we are talking about; while it takes a long time before a popular name is so generally known as to meet with universal acceptance. A very fine specimen exists on the grounds of the Kansas State Agricultural College, at Manhattan; but we have no record of the size of this tree.

THE HORTENSIA.—The Hydrangea was originally called Hortensia, and many have supposed that it was named in honor of Queen Hortense. This, however, is not the case—the original plant having been introduced from China by a French captain, whose wife's name was Hortense, and the name given to it accordingly. The accepted name is *Hydrangea Hortensia*.

RESIDENCE OF A. H. OLMSTED, ESQ., HARTFORD, CONNECTICUT.—Aside from our desire to illustrate occasionally the beautiful homes of our subscribers, the residence of Mr. A. H. Olmsted is given in order to show the wonderful growth of the Kudzu vine—*Dolichos Japonicus*,—or if strict botanical nomenclature must prevail, *Pachyrhizus Thunbergianus*. Of this vine Mr. Olmsted says:—

"I have used them only for decoration of balcony on first floor heretofore, but this year gave them rope up to loggia and they were not satisfied with that (45 ft.), but I believe would have grown to the very pinnacle on top of roof if allowed to. It is a veritable "Jack-and-the-Bean-Stalk" vine.

There is possibly nothing like it in the whole vegetable kingdom. Six inches a day is an easy task for it and it can make twelve. It has made on the grounds of the conductor branches of sixty and seventy feet in a season. The stiff racemes of rosy purple flowers are beautiful, but are hidden under the wealth of the Lima Bean-like foliage. It dies back considerably, but the roots are perfectly hardy.

RESIDENCE OF A. H. OLMSTED, HARTFORD, CONN.

COCHINEAL.—Though everyone knows what cochineal is, and especially the children who are fond of preparing Easter eggs, few know that it is simply a cottony insect, which feeds on the cactus, and which is scraped off and dried. Varieties of Opuntia are selected which have no spines, and chiefly one known as *Opuntia cochinilifera*, is employed. A plantation is first made of the kind of cactus on which the insect is to be raised, and colonies are then transferred to each plant. The insect soon extends and covers the whole with a white, cottony mass, of which our well known mealy bug might be taken as an illustration. When scraped off and dried they become an article of commerce of great value—selling in London at from $9 to $10 a pound. It has brought in the past as much, although at the present time not bringing more than from $2 to $3. To give some idea of the extent to which it is cultivated, and with the single small insect in mind, it might be stated that a total of six millions of pounds have been sent from the Canary Islands alone in a single year, and the amount received was over $3,000,000.

FUCHSIA TRIPHYLLA.—Mr Thomas Hogg, the well known botanist, and introducer of so many valuable new plants, writes :—

"In the number of your magazine for the current month reference is made to *Fuchsia triphylla* as being a native of Peru. As a matter of historical accuracy, and a correct knowledge of the geographical distribution of the genus, I beg to refer you to *Curtis's Botanical Magazine* for 1885 t. 6795 for a history of that plant and the reason why it was erroneously described as a native of Peru instead of St. Domingo, where it was discovered by Father Plumier, and from whence it was introduced to this country by myself."

FUCHSIA GRACILIS.

It might be remarked in connection with this subject that the old species of Fuchsia, as they were before the art of the hybridizer took them in hand, are still among the most beautiful of cultivated plants. In the garden of Mr. Joseph Crowson of Germantown last summer, an amateur who is a rare lover of good things, *Fuchsia gracilis*, an old species closely related to *F. triphylla*, was among the most charming ornaments. All these old species love partial shade, and a city garden, with its walls and fence boundaries keep the soil cool-ness so desirable. We give an illustration of this species herewith.

THE DOUBLE FLOWERED BEARBIND. — If those who are fond of English names for flowers were to attempt to follow up the many scores given to each plant in every part of the world, as we sometimes try to do, they would probably get sick of them, for new names are being coined continually. Certain forms of the "morning glory" have been called bindweeds from time immemorial, but English papers are now getting to call them bearbind, for what particular reason the change is made nobody seems to know ; surely bindweed is just as good as bearbind. By the way, there is a double kind from China known in cultivation as *Calystegia pubescens*, which, when introduced can never be got rid of. Every piece of root that may be broken off sprouts up and makes a new plant. Those who introduced it half a century ago have many a time wished they had never seen it,—but recently florists have given it some new name, and are now starting it off at high prices, as something which everybody ought to have.

PEANUTS. — In old times, before reaping machines came into existence, large quantities of grain were left on the land, which came to be, by a sort of unwritten law, the property of the gleaners. The well-known story of Ruth, the gleaner, is an illustration of the old practice. Since the advent of the mowing machine everything is cleaned up so completely that the gleaner has no chance,—and so rapidly has the gleaner disappeared from the grain fields that, at the present time, the younger generation scarcely understands the meaning of the word. In some other crops, however, the practice is still existent ; and this is especially true of the peanut. There seems to be very little in a pint of peanuts, but the consumption over the whole country is so enormous that over three million of bushels are produced in a single season in the countries where they grow ; North Carolina, Virginia and Tennessee are the chief states where most of them are produced ; grain and peanuts, indeed, are the established crops in the agriculture of these states. The peanut is a member of the leguminous family, and the pods, or legumes, after being produced, are thrust by the plant into the ground. Numbers of them are left in after digging, and not only do children, and some grown people reap a fair harvest from the gleanings, but all kinds of animals profit by what is left behind. It is said that dogs will hunt after, and be among the gleaners in search for abandoned peanuts.

VALUE OF SCIENTIFIC KNOWLEDGE.—In the olden time there were as now persons who derided those who pursued scientific studies. When it was first argued that the world was round, the carpers no doubt brought up the question : suppose it is, what good is it to know it? The voyage of Columbus might be a good reply ; but the same persons might to-day ask, what is the good of America or any thing in it?

Still these and similar questions kept back knowledge for ages. It seems scarcely credible that it is but a few centuries back that the world affected to believe that fossils were always fossils—rocks that had simulated the forms of living things.

The *Popular Science Monthly* remarks that it was only by a mental effort the great painter Leonardo da Vinci broke from the popular belief. He strenuously asserted the fossils had been living things,—though it was not till two and a half centuries afterwards that this fact became an axiom in science.

MARGUERITE CARNATIONS.—A new race of carnations has been produced in Germany, under the above title, which are said to be unusually dwarf—scarcely ever reaching two feet in height. They are annuals. Seed sown in the spring flower all summer until winter ; and seed sown in the fall, kept under glass, as we keep our carnations, are said to flower freely and abundantly all the winter and to be admirable for cut flowers. It is believed that these carnations will entirely revolutionize the modern florists' winter flowering carnations, as they can be raised so much more easily and will produce so many more blooms. They come into flower very soon after sowing.

A FINE COLLECTION OF PLANTS IN MICHIGAN.—In an admirable address at the laying of the corner stone of a botanical laboratory at the Michigan Agricultural College, Professor Beal stated that there were already 5000 species and marked varieties of living plants on the grounds.

ANTS.—Mr. Charles E. Smith says: "I succeeded very well by soaking pieces of sponge in sugar and water — placing them on the shelves where the ants were troublesome—after an hour they were covered with ants and were dropped into a bucket of boiling water."

FRUITS AND VEGETABLES.

FILBERTS IN WASHINGTON.—A correspondent at Seattle, Washington, asks the opinion of MEEHANS' MONTHLY, as to the probability of growing Filberts to a profit in Washington. The writer has had personal experience with the cultural conditions of this portion of the Pacific coast, as well as with filberts as grown for market purposes in the old world, and believes the State perfectly adapted to its successful culture. In the eastern portions of the Union they cannot be grown successfully because the catkins or male flowers mature a long time before the appearance of the female flowers, which therefore fail to produce nuts for want of fertilization. In the localities where the plant is very productive, the two sexes open their blossoms simultaneously. In the East there are often a few very warm days in late winter, which bring on the catkins prematurely, and this we believe is not the case in Washington.

SEEDLESS FRUIT.—Messrs. J. S. Collins & Son, of Moorestown, N. J., are introducing a pear under the name of the "Lincoln Coreless," which is not only valuable by reason of the absence of the core, but is said to be so good a keeper that it is in first-class condition in the middle of March,—when it becomes mellow, highly colored, rich, and of a delicate aromatic flavor, if kept to that time in an ordinary cellar. Single specimens have been known to weigh from a pound to a pound and a half. Pears without cores, as well as apples, grapes, and other fruits have been long known,—the Rutter Pear being especially known as one of this class ; but this is very capricious in regard to its flavor—being extremely liable to overbear, and it is well known to all pear growers, that when this extreme fruitfulness occurs, the flavor of the fruit seriously deteriorates. We are glad the Messrs. Collins are turning their attention to improving this class of fruit. We need only refer to the common currant of commerce, which is a seedless grape, to indicate the particular value which very often attaches to fruit of this character ; and we have often been surprised that no one has taken in hand especially to improve and bring forward first-class varieties of the seedless section.

HOTHOUSE GRAPES.—Notwithstanding the great improvement that has been made in the native grape, and sometimes to an extent which will make them even more agreeable to the consumer than the foreign kind, the foreign variety is still more pleasant to the majority of tastes; and considering how easily they can be raised under glass, it is rather surprising that cold graperies are not more in existence. Up to a quarter of a century ago they were much more popular than they are to-day; but they fell back chiefly because of the feeling that, as the foreign grape thrives so well in the climate of California, the time would come when persons could buy these grapes much cheaper than they could raise them. To a great extent this is so; and yet none of the grapes which appear in our markets from California, or those imported in cork dust from the old world will anywhere equal in size or flavor the best specimens of Black Hamburg which can be raised under glass. This paragraph is suggested by a magnificent bunch on our table, placed there from the cold grapery of Mrs. Alfred C. Harrison, of Chestnut Hill. Certainly specimens of the foreign grapes, purchased in our markets, could not anywhere near equal in flavor the richness of this well ripened specimen. Of course it requires some little knowledge of the requirements of grape culture, in order to successfully raise specimens like this; and in this respect, Mrs. Harrison is probably more favored than many would be who might attempt their culture, in having a very intelligent gardener, Mr. Lawler, under whose management these grapes are produced. Still, like everything else, it is easy enough doing these things when one knows the way, and it is not so difficult to learn the way after all.

HYBRID CURRANTS. — Prof. William Saunders, of Ottawa, Canada, tells us that he has succeeded in getting a good hybrid between the black currant and the gooseberry. Some one in the old world says that if you plant a lot of black currants among the ordinary currant and gooseberry, it is a complete security against the attacks of the gooseberry caterpillar. If this be so, Mr. Saunders' hybrid should have unusual value. It ought certainly to be caterpillar proof if anything of this kind can be.

WORDEN-SECKEL PEAR.—This is a new variety raised from the Seckel by Mr. S. Worden, of Minetto, N. Y. Many attempts have been made during the last half a century to raise seedlings of the Seckel which should be superior to its parent; but still, in many respects, this variety stands incomparable. This new introduction, samples of which have been sent to us by Smiths and Powell, of Syracuse, is to our mind one of the best of the many attempts made to improve on its parent. While we do not regard the flavor, writing only from these samples, as equal to the original Seckel, the fruit seems to be larger, and in some respects handsomer,—and, judging by what we learn of the tree itself, is a better grower; and all these qualities certainly make it a valuable introduction. Aside from what we can gather from the fruit sent, is the fact of its endorsement by the firm above named. There are few fruit growers in the United States who have paid so much attention to the pear as the members of this firm, and they know a first-class variety when they see it.

FRUITFULNESS OF GRAPE VINES. — There seems to be no doubt that while the close pruning of grape vines has its advantages that could scarcely be avoided in vineyard or garden culture; yet great longevity can only be achieved by allowing a vine a considerable extent of surface on which to grow. The celebrated vine at Hampton Court has been were it now stands for 124 years—one grape vine alone filling the immense grape houses. The present year, it is said, 1500 bunches were cut from it There are many other instances where large grape houses have been filled by the branches from a single vine, and in all cases they have proved to be long livers and to be remarkably healthy to a degree unknown in cases where the vines have been closely pruned.

MUSHROOMS IN PLANT HOUSES.—Since the almost universal adoption of the method by florists of growing the winter flowers in long benches, it has been found that the space beneath the bench can be turned to profitable advantage in the growth of mushrooms; and in many cases mushrooms and cut flowers are found to be extremely profitable.

THE YORK IMPERIAL APPLE. — Apples in many respects are local in their tastes. Kinds that do so well in some localities, are indifferently suited to others. Occasionally appear varieties that do well over a wide area, and when any one is in doubt what to plant, it is usually safe to select one of these easily satisfied varieties. The York Imperial is an apple of this class. It is a Pennsylvania seeding, raised near the city of York, but has been found to do as well in Kansas and Missouri as in its native home. A peculiar advantage is that it never over-bears, though sufficiently productive, hence it bears fair crops every year. It comes into use in December, but does not mature at once. Fruit has been kept in good order till late in spring.

GRAPE VINE DISEASES. — There appears to be a number of diseases peculiar to the grape vine when cultivated in California, that are unknown to localities outside of the State. There is one particular trouble, called the Anaheim disease. The Chlorosis is reported to be a serious trouble, and much difficulty is said to be found in many vineyards with something that is there termed Spanish measles. Notwithstanding all these troubles grape growing is yet one of the leading profitable industries of California, and new areas for grape growing are being continually added to those already existing. The Phylloxera, the great enemy of the French vineyardist, also follows the European vine to California; but here, as in France, the enemy has been partially conquered by grafting the vines on the American species. The Phylloxera injures the vine by attacking the roots; but the roots of the American vine seldom suffer as the European vine does.

JAPAN PERSIMMONS.—It has been stated in a Florida paper that in their own country the Japan Persimmons will occasionally weigh a pound each. There seems to be no record of the largest size that these have been produced in America. We should be glad to know from any correspondent the weight of any that have been produced exceptionally large.

FRUIT TREES IN GRASS.—At a recent meeting of the Massachusetts Horticultural Society it was stated that apples grown in grass ground will keep longer than the same fruit grown on cultivated land. Late-keeping varieties, therefore, should always be grown in grass lands.

It should however never be forgotten that while, all things considered fruit trees are healthier, and in every way more successful when grown in grass, the grass itself should never be allowed to grow long, unless abundant manure can be given the trees. Grass and fruit trees equally want manure,—and two families cannot be expected to live on food enough only for one.

YORK IMPERIAL.
Color yellow, bright streaked with red on the sunny side.

TEMPERATURE FOR THE GROWTH OF MUSHROOMS.—The mushroom in American pastures seldom starts into growth before the end of August or September, when the temperature of the soil has reached about 60 degrees,—hence this is taken as the temperature which the cultivator of the mushroom ought to endeavor to maintain in order to successfully grow this vegetable. A very experienced cultivator, however, states that he has found this temperature to be rather too high in growing the mushroom in houses prepared for the purpose. He finds that he has much better success with an even temperature of 55 than 60 degrees.

BIOGRAPHY AND LITERATURE.

THE MORAL OF THE HOLLY-TREE.

And as when all the Summer trees are seen
So bright and green,
The holly-leaves their fadeless hues display
Less bright than they;
And with the bare and wintry woods we see,
What then so cheerful as the holly-tree?

So serious should my youth appear among
The thoughtless throng,
So would I seem among the young and gay
More grave than they;
That in my age as cheerful I might be
As the green winter of the holly-tree.

—SOUTHEY.

PLANTAGENET.—A South Carolina correspondent says: "Will you kindly inform me whether the word *Genista* is pronounced with a hard or soft g? When speaking a few years ago in reference to the celebrated race between the English yacht of that name and our Mayflower, we pronounce it with the hard g. But in the July magazine you tell us that the name of the Scotch Broom is closely allied to Genet, and thus the plant Genet or Plantagenet. Here the g is evidently like j in sound, is it not?"

The g is always soft in every form, whether *Genista*, Genet, or Plantagenet.

HENRY WELD FULLER.—Massachusetts is quite famous for the number of its tasteful cemeteries; although this style of providing for the burial of the dead, as against the old fashioned church yard, originated in Philadelphia; the idea was entered into possibly more enthusiastically in Massachusetts than in any other State. Woodlawn Cemetery, near Boston, is one of these famous places. We notice by the proceedings of the Massachusetts Horticultural Society that much of the superiority of this place is due to Mr. Henry Weld Fuller, who was born in Augusta, Me., on the 16th of January, 1889. He was uncle of Chief Justice Melville W. Fuller, and was himself a distinguished member of the bar. When the idea of the Woodlawn Cemetery was first projected in 1851, it was simply a rough pasture, and very nearly everything in its present state of beauty was designed and laid out by him. He was Vice-President of the Massachusetts Horticultural Society for many years, and was a member of a number of illustrious societies for the advancement of art and science, not only in his own State, but also in other parts of the Union.

AGAVES AND YUCCAS.—Prof. Trelease of the Missouri Botanical Gardens, has just issued an admirable supplement to some former papers, giving illustrations of the species of *Yucca*, and a drawing and description of a new *Agave—A. Engelmanni*. There are few plants with so many points of interest as the *Yucca*, and this work will aid materially their lovers in identifying the species. By the way, how long does it take *Yucca aloifolia* generally to flower? One on the grounds of the conductors, certainly three-quarters of a century old, and possibly more, flowered for the first time this season.

NATURAL HISTORY IN HARVARD COLLEGE.—The chair of natural history in this College has become famous over the whole world through the fact of its occupancy by the celebrated Dr. Asa Gray. The first occupant of this chair in Harvard College was W. D. Peck, who received a premium from the Massachusetts Society for promoting agriculture, on account of some very valuable and original points he presented to the Society in an essay on the canker worm.

JOHN SARTAIN. — A pleasant visit to our office was one recently made by the celebrated artist-engraver, John Sartain, who, though in his 84th year, is as proud in his active interest in his profession as he was half a century ago. He contends that the usual advice to give up work in order to live long is nonsense. He has just finished an engraving of a famous picture, which will compare with any of his more youthful tasks. "Keep on as long as you can" is his motto.

DR. SCHUBELER.—The writer was under the impression that he was among the few correspondents in America of this great Norwegian botanist, whose death, some months ago, was announced; but his circle of friends here was much greater than supposed, and his portrait will therefore, interest many of our readers. His "Trees of Norway" is possibly one of the most delightful works on arboriculture ever penned. He had especially a love for the picturesque, and such forms of trees were frequently the subjects of illustrations in his work.

His native place was Frederickstad, of which his father was a leading merchant. He was born September 25th, 1815, and in 1840 took the degree of Doctor of Medicine. With an early love for botany he spent the whole period between 1848 and 1851 in explorations throughout every country in Europe. In the latter year he was offered the charge of the Botanical Department of the Royal Museum at Christiana, which position he held till his death in his 77th year, on the 20th of June. As a botanical lecturer and author few have done better service than Frederick Christian Schubeler.

Frederik Christien Schübeler

DANIEL NEEDHAM.—Whether any society achieves eminence, or falls by the wayside in practical usefulness, depends in a great measure on the ability of its chief officers. There is no question but the renewed strength of the New England Agricultural Society is, in a great measure, due to its President, Col. Needham. He was born in Salem, Mass., the 24th of May, 1822, and was educated in the schools of the Society of Friends. In early life he commenced his career as a farmer by purchasing land in the vicinity of Groton. He became eventually a large sheep farmer at Hartford, Vt. He served several terms in the Connecticut House of Representatives, and two terms in the Senate. Five years he was Secretary of the Vermont State Agricultural Society, and has ever since kept in the advance in everything pertaining to intelligent agriculture. In 1869 he was elected Trustee of the Massachusetts Agricultural College, which office he still holds. Few men living have done so much to advance the interests of American agriculture as President Needham.

PROF. C. C. BABINGTON.—Among the scientific men of the past generation, so many of whom have been recently passing away, or have been compelled to give up all active work in the sciences they so much loved, one who was formerly well known in botanical literature and other good botanical work, Prof. C. C. Babington, still perseveres on with his work, although at the present time in his eighty-fourth year. For over one-half a century he has been Professor of Botany in Cambridge University, and although he had an encounter with a bad attack of pneumonia twelve months ago, still continues to visit and attend to the work of his much loved Botanic Garden. Unable to walk, he is taken there every day in a rolling chair; and though it is not believed he will ever again be able to have the use of his limbs, his devotion to botany is as youthful as ever. He is the well known author of one of the best works on English botany, known as "Babington's Manual."

PROF. GEORGE HENSLOW.—This eminent English botanist, the third, we believe, in a direct line, who have also been conspicuous for botanical activity, and who has already made a name for himself in connection with first-class botanical observation, is now engaged on a work to be called the "Origin of Plants." Prof. Henslow is a strong believer in the doctrine that environment has much to do with the origin of forms.

PROF. LEO. LESQUEREUX.—This remarkable man was born in the same country with Prof. Agassiz, namely Switzerland, and came to America in 1848. After he grew up, he lost wholly the use of his hearing, and yet managed to learn and speak the English language thoroughly and fluently though he had never heard a word spoken but French. He resided at Columbus, Ohio, till his death in 1889, and became a master in fossil botany.

GENERAL NOTES.

THE FUTURE OF MEEHANS' MONTHLY. — The end of the second volume of MEEHANS' MONTHLY is now approaching, — practically our first year of trial, as the two volumes will be bound in one,—and it may not be out of place for the proprietors to express their pleasure at the warm support their venture has received. There seemed a want for a work which should combine plain and practical instruction for amateur gardeners, with general information in all those branches of intelligence that make the garden, the fields and the woods so enjoyable to every one. Though lovers of art and nature may not have a garden at all, they find it profitable to read, and bind for their libraries MEEHANS' MONTHLY.

It is a pleasure to know that in this effort the magazine is not trespassing on any field occupied by other magazines, and is so unique in its plan, that no one can afford to be without it, no matter how much they may be interested in others. In a letter now on the table, dated from Santa Rosa, California, the writer says: "Enclosed is my subscription for the coming year. I had concluded that I had not time to read another magazine considering how many now come to my house,—but find I cannot do without reading yours." And so say so many, that the proprietors begin to feel vain of the compliment, and will enter on the coming volume with even better spirits than before.

It must, however, be remembered that publishing magazines is a business by itself. The proprietors of MEEHANS' MONTHLY undertook the work because regular publishers were afraid to trust the people. Solid substantial knowledge they thought "would not pay," as would mere clap-trap. "Entertainment and not instruction is the order of the day." The success of the magazine is the best answer. Still in the absence of the machinery of a regular publishing office, the proprietors hope to have the continued good will of their friends in sending other subscriptions with their own, as well as good names for sample copies.

TRANSPLANTING HOLLIES. — "Allow one who has hoped against hope to get transplanted Hollies to grow, to return warm thanks for the excellent chapter on the subject in the November number. Though the many illustrations are worth the whole subscription price,—the numerous practical paragraphs, condensed and pointed, give the magazine an additional charm,"—for which compliment the conductors return their best thanks to our correspondent. They believe the effort at condensation is one with which our readers are all pleased.

CAÑA AGRA.—Mrs. Paulin, of Bloomfield, New Mexico, writes that the merits of this plant for tanning is no longer a mere speculation, but that a tannery is now in practical operation there, which turns out a large quantity of fine leather. The plant referred to under this Mexican name is probably *Costanea chrysophylla*. She speaks of the apple as being one of the successful fruits of that portion of New Mexico, and that the apples themselves are remarkable specimens of beauty.

SPECIMENS FOR NAME. — Numbers of correspondents send us specimens to name, or for some other purpose, but in many cases the letters do not come when the specimens arrive, or sometimes do not come at all, and it is, therefore, impossible to return replies. The law does not prevent the name of the sender being written on the envelope, and it would be wise in all cases for correspondents to remember to do this.

OUR NEXT PLATE.—The colored plate for December, *Epigæa repens*, recalls many lines of poetry and scraps of history of the early explorers and settlers of America. Although its common name May-flower would seem to signify its blooming in that month, it is often found in flower in April, "peeping out, almost from the edge of the retreating snow," as one author has it.